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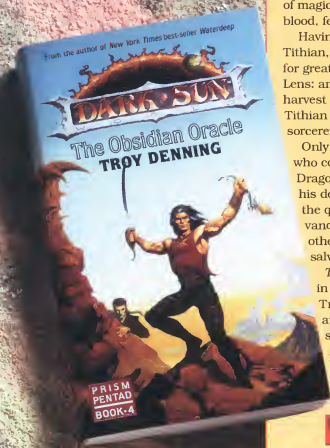


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## STORIES

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# A Great Chap, Indeed

Kim Mohan

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I didn't do this piece of writing as soon as I could have, and I admit with a bit of shame that the reason I didn't do it right away was because I wasn't sure all of you would care about Chap Reaver.

That decision has been eating at me for the last three months, and now I've made a new one. I still can't be sure you *would* care about Chap, but I do know that you *should*.

In this world of mine, filled with people I'll never forget, Dr. Herbert R. Reaver will always stand out as one of the most memorable individuals I never met.

The closest we came to a face-to-face meeting was a few phone calls—calls that I would have remembered and cherished more if I had known how soon Chap was going to die. But no one could have predicted that on January 11, 1993, this writer and doctor who had the world by the tail would suffer a fatal heart attack.

Casting about for ways to console myself, I was heartened by the fact that I had saved every scrap of correspondence he sent me. About once every couple of weeks since January, I've leafed through that small stack of paper. Doing this brings back memories that are almost as vivid as the original experience of receiving each of those letters. It helps me deal with the realization that I'll never get another letter from Chap, because I know that at least I have the ones that are in front of me right now.

The first one, dated Oct. 2, 1990, and addressed to "Fiction Editor," came in along with a manuscript called "Get Smart." Beating around no bushes whatsoever, it opens with the line: "You editors are so hard to figure." Of course, no editor could resist that kind of hook, and I read on. Without making it sound like a brag, Dr. Reaver went on to say that he had eventually sold everything he had ever written, and his first novel, *Mote*, was about to be released after a number of positive advance reviews. "So how come I've had 11 rejections on this piece?" he asked. "I like it better than all the rest. My students think the story is wonderful. I have them intimidated. Teachers, like you editors, wield such power."

I read the story, and I liked it—apparently more than the first ten editors did, anyway. After going through some revisions and a title change, it was published in the July 1991 issue of this magazine as "Feel Good Stuff"—which would turn out to be Chap Reaver's only publication credit in a professional SF magazine.

Between the time we started corresponding and the time that story got printed, *Mote* and its author took the mystery genre by storm. The book won an Edgar Award from the Mystery Writers of America as the best young adult novel of 1990. His second novel, *A Little Bit Dead*, is on the ballot for the 1992 award in the same category.

Like so many of his colleagues in storytelling, Chap was a writer by

avocation. He had a successful chiropractic practice for nearly 30 years, and no doubt could have provided for his family quite well if that was all he ever did. But he also loved the art and craft of writing, and not only did he write well, he shared his knowledge and his insights with creative writing students in the Marietta (Ga.) Community Schools. On several occasions he used "Feel Good Stuff" in a reading for one of those classes, and always dropped me a line afterward to tell me how much the kids liked the story. No brag, just fact. "Several people have commented that 'Feel Good Stuff' was the only story that made them cry!" he reported to me a year before he died. "Some of them were guys! Tough guys! Like us!"

Never try to kid a kiddier, Chap. You were never a tough guy, because a tough guy couldn't have written that story. What you were—what you will always be, in the memories of people who knew you—was a sensitive, energetic, talented, and self-assured person. If you were ever egotistical, it was because (unlike most egotists) you had a right to be. Everything you did, from treating a patient to polishing a paragraph, you did to the best of your ability. And your ability, quite obviously, was considerable.

And I'm not a tough guy, either. That story didn't make me cry, but the news I got last January sure did.

So long, Chap. See you later, I hope. ♦

# Reflections

## Robert Silverberg

I've been looking through a recent issue of Charles N. Brown's news magazine *Locus*—the December 1992 issue, containing the semi-annual listing of the science-fiction, fantasy, and horror books that will be published over the next six months. And, as usual, I've been staring at it in wonder and bewilderment and a certain sense of dismay.

Here, for example, is the list of forthcoming books for the months of May and June 1993, from one publisher chosen more or less at random—Tor Books:

May '93: *Mouwar's Magic* by Piers Anthony & Robert A. Margroff; *Challenges* by Ben Bova; *Glory* by Alfred Coppel; *Spirit of Dorsai* by Gordon R. Dickson; *Rainbow Man* by M. J. Engh; *People of the River* by W. Michael Gear and Kathleen O'Neal Gear; *Something Stirs* by Charles L. Grant; *Conan and the Gods of the Mountain* by Roland Green; *Alien Bootlegger and Other Stories* by Rebecca Ore; *Burning Bright* by Melissa Scott; *Throy* by Jack Vance; *To Live Forever* by Jack Vance; *Beachhead* by Jack Williamson; *Border-town* ed. by Terri Windling & Mark Arnold.

June '93: *The Count of Eleven* by Ramsey Campbell; *Strange Things and Stranger Places* by Ramsey Campbell; *Dragon Rigger* by Jeffrey A. Carver; *By the Sword* by Greg Costikyan; *Spiritwalk* by Charles de Lint; *Lost Dorsai* by Gordon R. Dickson; *The Price of the Stars* by Debra

Doyle & James D. Macdonald; *Star-pilot's Grave* by Debra Doyle & James D. Macdonald; *Car Warriors: The Square Deal* by David Drake; *In The Fog* ed. by Charles L. Grant; *Requiem* by [sic] Robert A. Heinlein; *White Queen* by Gwyneth Jones; *The Elementals* by Morgan Llewelyn; *Cold as Ice* by Charles Sheffield; *Kalimantan* by Lucius Shepard.

That's *twenty-nine* books. From one publisher. Within a 60-day period. The same issue of *Locus* reports anywhere from six to a dozen titles emerging per month from each of these imprints: Ace Books, Avonova, Baen Books, Ballantine Del Rey, Bantam Spectra, DAW Books, Penguin/Roc, and Pocket Books. TSR is in there with two or three more a month, Warner Questar with one or two, Zebra with two or three, Dell Abyss with a monthly horror novel, and on and on (Arkham House, Atlantic Monthly Press, Avon, Avon Camelot, Avon Flare, Ballantine Ivy, Berkley, Carroll & Graf, Circlet Press, Fawcett Books, Macmillan Collier Nucleus. . . )

The mind reels.  
The eyes glaze.

Editor Brown tells us that the six-month list contains over 950 titles, about 650 of them published for the first time.

I have here, by way of contrast, the two issues of *Fantasy Times*—the *Locus* of its era, edited by James V. Taurasi—that were published in February 1953, just about the time I

was beginning my career in science fiction. These are the science-fiction books and fantasy books, in toto, that were published in the United States in February 1953:

*The Worm Ouroboros* by E. R. Eddison, a new edition. Dutton, \$5.00.

*Future Tense* edited by Kendall Foster Crossen (anthology). Greenberg Publishers, \$3.00.

*Ballroom of the Skies* by John D. MacDonald. Greenberg Publishers, \$2.75.

*The Continent Makers and Other Stories* by L. Sprague de Camp. Twayne, \$2.95.

*Space Service* edited by Andre Norton (anthology). World Publishing Co., \$2.50.

*West of the Sun* by Edgar Pangborn. Doubleday, \$2.75.

You may think, from the prices listed here, that those were paperback books. Oh, no. Those were *hardcovers*. Science fiction barely existed at all in paperback form in February 1953. *Fantasy Times* lists just two paperback sf releases (no fantasy, no horror) that month, both from Bantam Books:

*Space on My Hands* by Fredric Brown (collection), 25 cents.

*Brave New World* by Aldous Huxley (reprint), 35 cents.

Also noted, though, is the publication, due the following month, of the

very first Ballantine science-fiction title: *Star Science Fiction Stories*, edited by Frederik Pohl, featuring sixteen original stories by the likes of Fritz Leiber, Ray Bradbury, Arthur C. Clarke, Robert Sheckley, Clifford D. Simak, John Wyndham, and assorted other future grand masters, all of them already quite famous then. All in a single volume.

So February 1953 brought us two original novels, two anthologies, one short story collection, and one reprinted classic in hard covers, and one short story collection and one classic reprint in paperback. The cost of the entire package was just under twenty dollars—figure about \$200, in modern purchasing power—and an avid reader could easily polish off all eight of the books in the month of publication, even considering the great length and complexity of the Eddison novel.

On the other hand, the avid reader would have had many more sf magazines to deal with that month than we do today: such now-legendary publications as *Galaxy*, *If*, *Science Fiction Plus*, *Planet Stories*, *Other Worlds*, *Startling Stories*, *Thrilling Wonder Stories*, *Imagination*, *Space Science Fiction*, and *Science Fiction Adventures* were all going strong, along with *Amazing*, *Fantasy & Science Fiction*, and *Astounding* (later *Analog*); and *Fantastic Universe*, *Beyond*, and *Spaceway* would soon be starting. Science fiction was, in fact, primarily a magazine field in 1953, with just a smattering of books being published and most of the interest centering on the gaudily named monthly or bimonthly newsstand periodicals. Even so, all the science fiction being published by everybody that year, in books and magazines both, probably amounted to less, in total wordage, than Tor Books would issue in May and June of 1993 all by itself. And 1953 was considered a boom year at that. The totals for 1950, say, would have been far slimmer.

As you can see, science fiction was like a small town in 1953, and it has grown into a giant metropolis now. Everybody knew everyone

else, back then; conventions were like family reunions; and we all, fans and writers alike, stayed up to date with about every word of sf that was being published, reading all the new stuff as it came out and maintaining a deep and inclusive knowledge of the classic novels and stories of previous years. We were steeped in it. We were all experts, firmly grounded in the best of past and present.

And now?

I blush to report that I have never read a single word of fiction by fourteen of the authors of those 29 Tor books, and most of the rest are known to me only by a short story or two. The only ones with whose writing I can claim any real familiarity are those whose careers, like mine, go back across the decades—Dickson, Williamson, Vance, Bova. (And Heinlein, of course, but the book listed under his name is largely a collection of tributes to him by others.) Of the “newer” writers, the only ones I’ve managed to read more than sporadically are Shepard and Sheffield, who aren’t really new at all, unless you compare them to Williamson, Dickson, Vance, and Bova. Those who have come along more recently, like Doyle and MacDonald or the Gears, are completely unknown to me. (And, since I rarely read fantasy or horror fiction, so are most of the contributors in those categories.)

It’s too bad. I miss that feeling of knowing everybody and having read everything. But that’s an impossible goal nowadays. It takes longer to read just the titles in Charlie Brown’s semiannual list of forthcoming books than it did to read all the books that were published in any given month of 1953.

The science fiction audience has vastly expanded since 1953, of course, thanks to such movies as *Star Wars* and the television success of *Star Trek* and its successors. Nevertheless, there’s obviously too much sf being produced nowadays even for that much larger readership, and the glut has made it difficult, even impossible, for those of us who care

about science fiction to find the gems amidst the tons of dross that steadily pour forth. Which means that gifted new writers have had to battle desperately for attention in the overcrowded marketplace in a way that simply wasn’t the case when the likes of Harlan Ellison, John Brunner, Frank Herbert, Anne McCaffrey, and Robert Silverberg were beginning their careers forty years ago.

Judging by the cutbacks in output that most of the book publishers have been announcing over the past year, supply and demand are starting to come into balance. That too is rough on the newcomers. As the lists shrink, the writers who joined the party in the past decade are beginning to suffer. Those who failed to establish solid followings right away are falling by the wayside, and the newest writers may not get started at all. It’s no longer such a simple thing to launch your career by selling a three-novel series to some enthusiastic publisher, as new writers galore were doing a few years back. A somber Darwinian process is now at work, rough on the nonsurvivors, but likely to result in less quantity and more quality for the readers.

Genies don’t go back into bottles, though, and omelets don’t become eggs in their shells again. Barring an unthinkable economic crunch or a total shift of reading tastes, we are not likely to see a return to the era of my adolescence, when sf was a very minor field and the publication of any new science-fiction book was big news in our field. Too many publishers have set up regular sf lines for that to happen. As soon as reduced output leads to increased unit sales for the titles that are published, they’ll step up production again. Today’s cutbacks are only setting up the conditions for tomorrow’s new boom.

As a writer and as a friend to writers, I suppose I applaud that. As a long-time reader who looks back nostalgically at the quaint small-town atmosphere of science fiction as it was forty years ago, I admit to a certain degree of regret. ♦



# The ULTIMATE ANTHROPIC PRINCIPLE

Jefferson P. Swycaffer



bash © 93

Illustration by  
Kent Bash

**I**t was foolproof. The best plans always are.

To work at all, the decision had to be taken out of my hands. A computer, or other electronic relay, would have functioned best, but at the time, no computer system had sufficient powers of discrimination to make the necessary decisions unassisted.

I searched for many weeks, until, at the last, I found the perfect confederate. His name was Manfred Kircher, but I found it easiest to refer to him as "Fritz." Until recently, Fritz had been employed by an unpleasant group of men under the aegis of the late, unlamented communist government of East Germany. His job had been generalized, with no specific title or assignment. He was a driver, wall-patrol gunner, mine-layer, fugitive tracker, and torturer of prisoners. He was a Jack-of-all-Atrocities, his versatility limited only by his lack of intelligence.

We took to each other immediately. I was gratified by his brawny shoulders and vacant, ovine expression, which promised obedience without question. He was avid for my leadership and direction, although the hard currency I had with me in substantial amounts may have had some bearing on his docility. I showed him my treasure of treasures, a stolen passport blank, to which an expert could be found to affix a photograph, and his devotion could not have been more doglike.

We sat in the corner of a small Regensburg beer hall, steins and a basket of pretzels in front of us. Fritz was at one drunk on the heady brew of freedom. He had lived since the unification in fear of discovery, and now he had been spared.

"Fritz," I said.

"My name is Manfred." He thumped his chest with sledgehammer force. "Manfred is my name."

"Yes. Yes." I held up a hand, lest he rephrase the sentence in any further ways. "Good boy, Fritz."

He frowned, then smiled. I was unsure, just then, whether to stock up on raw meat, or bananas.

"Fritz, I need your help."

"Ja. I will help you." His eyes narrowed meaningfully. "Who is it you want to hurt? I break their heads? I shoot out their knees?"

"No. No. Nothing like that." I was really quite jovial, for this moment marked the beginning of my long climb to the summit of personal success.

"Oh," he said, losing most of his interest. He crammed pretzels into his mouth, looking around the room with the habitual suspicion of a man who has been hunted.

"It's more complicated, you see. I will need to fashion an explosive device, which will be detonated by radio."

A few minutes passed, while the idea percolated, like naphtha through several strata of oil shale. Eventually, it surfaced, and his eyes seemed to darken. "Explosives? Hunh. Might be dangerous."

"Of course it will be dangerous." I grinned at him in the nastiest possible way. "It will be *fatal*."

He grinned, seeing the joke for what it was. I pushed the basket of pretzels his way, lifted my own beer, and—*Prosit!*—he imbibed a giant mouthful of foaming lager.

"I need the explosives fastened into a collar." I drew sketches in the air with my hands. Fritz nodded, watch-

ing my gestures with attentive fixity. "A collar which will go under a shirt collar—this means it mustn't be too thick, or it will be visible. It must go undetected."

"Undetected?" Fritz thought, the masses within his skull shifting slowly. "Will there be 'sniffers' such as they have at the airport?"

"I don't expect so."

"Hunh. A collar?"

"Yes, a collar."

Two and two still hadn't added up to anywhere near four. "A collar, to blow the head off a man? To kill a man very quickly, in a very messy way?"

"Yes. That is exactly what I want."

"It can be done. Yes. Semtex and primercord. It could be molded very flat, and sewn between pieces of cloth."

"That would be good."

"The detonator is small. The radio receiver can be made small also."

"Excellent." I beamed at him. He drank more beer and ate more pretzels, giving himself a reward for being so clever.

"But the subject will still likely notice," he said, growing serious once more. "As thin as we can make it, the collar will still not feel like an ordinary shirt collar. Your subject will feel its weight. He will feel its thickness. He will feel how stiff it is."

"No, no, no!" I'm afraid I grew a little angry, and it surely showed in my face. "It will be worn *under* the collar. It doesn't matter what it *feels* like. It only matters what it *looks* like. I don't want anyone to see it. Do you understand?"

"No. Who is going to be so stupid as to wear this explosive collar?"

"I am."

He sprayed beer and soggy pieces of well-chewed pretzels all over the table in his involuntary snort of surprise. He grabbed a napkin quickly, and wiped his chin—while I was drenched and speckled with the food and drink I had paid for. He couldn't meet my gaze, afraid, perhaps, that at that moment, the pressure of my eyes would have turned him to stone.

A very long time went by. Sighing, I cleaned myself up, mopping my face with the cuff of my suit jacket. Fritz worked up his courage and looked me in the eye.

"If you want to die, you can just ask me. I will kill you. You don't have to blow your head off."

"Yes I do. But it's all right. I won't."

"I don't understand."

I told him. I explained everything, in every detail. I explained to him the "Many Worlds" interpretation, and the "Anthropic Principle." I lectured him on particle physics and cosmology. It took the better part of the night, and between us we drained three more pitchers of beer.

"I still don't understand," Fritz said, sitting anxiously forward in my old Chevy as we drove into the millionaire's city, Las Vegas.

"You don't need to understand. You just need to obey orders."

He nodded once, quickly, all his muscles stiffening,

then relaxing. It wasn't clear to me whether the seat belt could take the strain. He truly was a remarkable specimen.

I needed a different kind of specimen. We drove for a while through the city. It was daylight, hot and dry, desert weather to fit a desert town. I avoided the strip, the glittering casinos, the high-rollers and the limousines. Instead, I drove along the back ways, past little postcard houses and square, pastel-hued apartment blocks.

I saw what I wanted. The brakes squealed as we slid to a stop in front of the local Humane Society office. Fritz and I went in. A few minutes later, we came out again. Fritz was leading a dog on a short leather leash.

The dog was a pleasant, tongue-lolling German shepherd. She'd had all her shots, and had even been spayed. She and Fritz took to each other instantly. I wasn't even in the running. She looked at me like I was something that belonged to Fritz, like an old pair of his shoes or a bone he used to like to chew.

I confess, the smile that crossed my face just then was not the most pleasant smile in the world. I steered the car and pushed the gas. Soon, we had left the city of Las Vegas behind us.

In the desert, in the cool of the morning, a hundred miles from nowhere, we tested the collar. Fritz drove a stake into the hard sand and clipped the dog's lead to a ring welded to the end of the stake. Then he put the collar around the dog's neck.

He looked at me.

"Is this necessary?"

"Yes. I have to know that the collar will work. Do you understand I have to be *dead*."

Fritz nodded, although he didn't understand. It was obvious that he never would understand. I didn't know why I kept trying to explain it. He bent and activated the detonator, then straightened and looked at me.

"What is the dog's name?" he asked.

"What?"

"The dog. What is her name?"

"Does it matter? She's about to die."

"Yes. But what is her name?"

"You name her," I spat.

"All right." He looked off at the horizon for a moment. Then he looked at the dog. The dog looked back, her tongue hanging halfway to the ground from her mouth.

"American. That is the name. I name her American Shepherd. She is a German shepherd, but her name is American Shepherd."

I stared at him the way folks do when someone nearby them has said something unutterably stupid. "Yeah," I responded at last.

"Good-bye, American Shepherd," Fritz said. We walked away into the desert. American Shepherd tried to follow us. She whined a little, in that way that dogs have which some people find so endearing. To me, it was only an annoyance.

We turned around. Fritz brought out the remote detonating unit. It was a small box with a little whip antenna and a button, the button protected by a hinged cap. He lifted the cap. He proffered the box to me. "Do you want to press the button?" he asked.

"No."

"All right." He shrugged, and pressed it.

There was a sound, sort of a bang and sort of a thump. The shock wave pressed against our faces and chests, and kicked up a little cloud of dust. The explosion didn't seem particularly loud, but after a few seconds we heard it echoing back from the far hills. The dog was dead, lying in two large pieces in the center of an almost perfect circle of blood.

I glanced at Fritz. There was no emotion on his face. No sorrow, no regret, no sense of loss. That was good. If he'd grimaced or frowned, I'd have begun to doubt him, and if even a single tear had leaked from his eye, I'd have given him his walking papers on the instant. I'd have turned him in to the immigration authorities too, just to make his life as miserable as possible.

But, silent and stony, he just stood and watched.

I let him bury the dog, although if I'd said not to, he'd have obeyed, and left the carcass for the buzzards to rip.

That night, we made our debut in Las Vegas. Fritz was drawn up to his full height, and bore himself with military precision and stiffness. He might have been back in his old unit in the East German Army. It was a new uniform I'd supplied him with, however: a sharp black suit, with a ruffled white tuxedo shirt and a little bow tie. He looked like murder incarnate, six and a half feet of muscle, with short-cropped light brown hair and a weather-beaten face.

We walked in from the night and into the glittering aisles of the Glory Hole casino, bathed in the thousand blinking lights from above, below, and every side. I saw the reactions people displayed when Fritz swam into their ken.

"Look at the goon," people whispered. "Look at Godzilla." They nudged their girlfriends in the ribs, and they tapped their boyfriends on the shoulder. "Look at the ape. Look at the dinosaur."

No one paid me very much attention, not at first. Little by little, it grew on them. What an important person that man must be, they told each other, to come here with so powerful a bodyguard.

The collar around my neck was a strangely comforting weight. Overall, with explosives and fabric to conceal them, and the little button of the battery, and the detonator no larger than half a cigarette, it came to less than five ounces.

Were it to go off, my neck would be cut clean through. I'd be dead. Absolutely, irrevocably, permanently dead.

Fritz had the remote detonating unit in his coat pocket. At the touch of his thumb, he could kill me. The thought sent a thrill of pure terror slicing through my body. I mastered it, even enjoyed it, in a way. It was a cold feeling, as cold as the air-conditioned casino felt as we had entered from the warm desert night. My stomach felt cold and hard, and my spine felt cold and loose.

It didn't matter. It didn't matter a bit. In a moment, I would be on my way toward being rich . . . or I would be dead. It all depended on which view of wave/particle duality was correct.

I led Fritz to the cashier and converted my wad into a handful of large-denomination chips. By high-rollers' standards, it wasn't a great deal of money. Thirty-five thousand dollars. It represented the down payment from the sale of my house, a second mortgage taken against my sister's house, maxed-out accounts on seven different credit cards. It represented the personal jewelry belonging to the wife of a good friend of mine, jewelry that now resided in the safe of a pawnbroker in Chicago.

I'd pay it all back. Or else, you know, I'd be dead.

I took the chips in my hand. I walked around, savoring the moment. Poker? Craps? Roulette?

Roulette. It was too symbolic to be passed up. The Wheel of Fortune, little changed in eight hundred years. O Fortuna, O Lady Luck, it's to you we pray. Not to God, not to Jesus, not to Mohammed or Buddha or the ancestors or the spirits. We pray to the almighty dollar, and to Lady Luck.

Well, spread 'em, Lady, because I've got you whipped. I'm in control. I'm the man who raped you. I am Lord Luck.

Or else . . .

Roulette. I looked up a pit boss. A young man with stylish blond hair and a tailored, wine-colored suit. I signaled him, backed him away from the table and, shoulder forward, voice low, explained to him what I wanted.

"I've got thirty-five grand in chips here. I want to double it . . . or lose it. It's above the limit for the wheel. I need your okay."

"Everything, sir?" he asked, his voice pure business. People might have made similar requests every day.

"Everything. Put it all on . . ." I paused. I turned to my bodyguard. "Black, or red, Fritz?"

A lifetime of communist indoctrination hadn't worn off entirely. "Red?" he answered, although hesitantly.

"Everything on red."

"Very well, sir. Thirty-five thousand dollars on red. You can go up and place the bet yourself." He escorted me forward, helping me to a place at the side of the betting layout.

I reached forward, and set the chips in a neat pile on the "Red 2-1" space. My hands never trembled at all. I had total confidence.

The pit boss and the croupier made little faces at each other, little gestures. There was a whole dialogue, for people who knew how to read it.

"That's a lot of money."

"Yep. It's okay."

"If you say so."

Then the pit boss made another gesture, low, with his hand hidden by the jacket flap of his coat, but I saw it, because, as I said, I knew what to look for. "Security. Stand by."

Stand by. Just in case this crazy middle-class loser wigs out when he sees he's thrown away all the money he has in the world. Stand by to drag him, screaming and crying, back to a quiet little lounge where he can be fed orange juice and doughnuts and comforted and pitied and eventually, about dawn, poured out into the street and told to go home.

What's horrible is that it happens in Las Vegas. It happens all the time.

Guy with explosives around their neck—now, that doesn't happen often.

"Place your bets. . . . All bets down. . . ."

The table hadn't been badly crowded, not at first. But my bet caught people's attention. People looked over, looked away, looked back. Cowboy hats and diamond necklaces, t-shirts and evening gowns, snakeskin belts and cummerbunds. And staring eyes.

"All bets down."

The operator twisted the wheel and spun the ball.

Fritz had faded away to a safe distance. He was standing as far from me as he and I had both been standing from American Shepherd. He looked at me. I looked back.

With anyone else, there would have been a kind of communication. A message, heliographed from the eyes to the eyes. A smile, a wistful tug of the lip, a sad expression, a courageous lifting of the head. But Fritz stood back, his hand resting easily, naturally, in his coat pocket.

I wondered what he felt. Anxiety? Fear? Excitement, a strange, fearful joy similar to my own? Perhaps there was communication after all, for my eyes must have seemed as fixed and cold and dead as his, in the instant he watched me.

He could hear the croupier. He knew his duty. If the number came up red, he would relax and take his hand out of his pocket. If the number came up black, he would press the button. After that, it was up to him. He'd been paid, and the car would be his, assuming he could get out of the casino under cover of the confusion. The crowd would panic, and everyone would scream and shout. It would be quite an event.

Fritz would be on his own. Just as, right now, I was on my own. He couldn't help me. He could only kill me.

But it wouldn't happen! It wouldn't! I could not be killed. That was the whole secret to the operation.

My neck started to sweat.

*Would the sweat short out the contacts on the detonator?* I wondered in a sudden panic. Was that the flaw I'd overlooked? The Worst Possible Cases started running through my mind. The wheel coughs up black, I lose my money, my collar starts to smoke, a casino Security man pulls it open to try to save me, the explosive goes off, not killing me, but cutting my spinal cord, paralyzing me, and then it's jail and . . .

*Shut up! Shut up!* I snarled silently at myself. Don't panic. Ride it through. Wait. Wait until . . .

Wait until the ball slows, slows further, then hits the ridges of the moving wheel and bounces. . . . Wait until it slips down to the inner ring of the wheel, battered by the moving ridges, falling into one slot and then back out. . . . Wait until the rattle pauses, ticks and tacks the final few times, and stops at last. . . .

"Number twenty-seven, red," the croupier said, his face all smiles. "Congratulations, sir."

I was alive.

In half of all the possible worlds, I was dead, and a scene of blood-sprayed havoc ensued that defied all de-

scription. But I didn't care about those universes. I had no point of view there. They were irrelevant to me.

That was the Ultimate Anthropic Principle: a mind can only exist in a universe that permits it to exist. The detonation of a few ounces of Semtex would not permit my mind to exist. Ergo, my mind existed in the universe where the explosion did not occur.

The universe where I won.

"Congratulations," said the pit boss, standing close by my side, smiling for me, smiling for the crowd.

He was good. So were the table crew, and, in their unpracticed way, so was the crowd that surged forward to cheer me for having won.

"Congratulations! Congratulations, mister!" They swirled around me, the pit boss guiding the celebration with crowd-handling skill earned in this cattle-market of human hopes.

"Make way for our high roller. Highest payoff of the day. Make way for the gentleman." He grinned at me, his blond hair bobbing with each motion of his head.

A table assistant approached me and handed me a stack of chips. "Your winnings, sir." He, too, smiled. They were happy, so happy; they enjoyed giving money away. It was the best part of their whole day.

I was stunned, relieved at my luck. They saw that. But quickly, I recovered, and put on a confident expression. "Excellent, gentlemen. Excellent." I tipped them. Bless me if I didn't tick off the top chip—a five-hundred-dollar chip—and hand it to the pit boss. "For you and the boys."

"Thank you, sir." He steered me carefully through the fluid crowd. I think he was heading me toward the bar, on the assumption—not incorrect by any means—that I could have used a drink. But I stopped him.

"I'm not finished, you know."

"Of course not," he said, all smiles.

"I'd like to play another game."

"Another game, sir?" he asked.

I looked at him. There was greed in my expression. Greed was something he knew well. But there was more. He stopped. I stopped also. A small crowd still clamored around us. A casino publicity worker took our photograph. The flash of the camera, the noise, the light, the cool air, and the tangible smell of money and power all surrounded me. It was better than sex.

"Can you handle another one just like the last one?" I asked, low and slow and deadly.

He smiled, but it was an automatic smile, a facial habit he'd trained his chin and lips and cheeks to perform when he didn't have anything better to do with them.

"Yes, sir." He escorted me over to another table.

"Why don't we put it on a first-name basis?" I asked, twisting the knife. I offered him my hand. "Rod. Rod Benson." It bore no resemblance at all to my real name.

"Well, howdy. Pleased to meet you. I'm Jason. Jason Prester."

*Sure you are, I thought. And I'm Frank Sinatra.* I shook hands with him. "Yep. My name's Rod." I bared my teeth. "But you can call me 'Lord Luck.'" It was a stupid thing to say, but I couldn't resist.

His smile grew thin, although not tremulous. He was still on his home ground. "Pleased to meet you, Lord Luck."

It was the truth, if only he'd known it. *I was* "Lord Luck." I was willing to bet my life on it.

But where was Fritz? I couldn't succeed without him. I looked around. There. There in the crowd, following along patiently, obediently, an unaccustomed anxiety furrowing his brow. He caught my eye, and tried to ask for instructions.

"Give me a moment," I said to Jason. "I need to calm down my bodyguard. He doesn't like seeing me this close to this many folks."

That wiped the smile from Jason's face. Bodyguards weren't standard issue for the kind of pudgy, middle-American loser I seemed to be. He stood still, while I waded to him through a sea of cheering faces and grab-by hands.

"Boss?" Fritz asked, speaking loudly to be heard. More photographers came up and took our pictures. But Fritz's enormous physical presence awed them, just a bit, and the crowd afforded me just a bit more respect.

"I'm going to gamble again. Just like last time."

"Exactly like last time?"

"Exactly."

"I'm supposed to . . ." He held up his hand and made a pushing motion in mid-air with his thumb.

I nodded. "Yes. You must. Do you understand? You must."

"Yes, boss."

The pit boss had heard some of our discussion. He didn't like it. He hated it like poison and cheating and blackmail and murder and embezzlement. But he didn't hate it as much as he hated poverty.

"This way, Mr. Benson."

"Call me Rod." My face was as angelic as a child's, and my face was as wicked as Satan's.

"Real good, Rod. Right this way. A new table for you."

"Good. Good." I handed him my chips. "All of it, Jason. All of it. On red."

He placed it. The operator spun it. The ball cooperated. "Number sixteen, red."

The attendant doubled the stack of chips. A hush fell.

"Let it ride," I said.

Heliographed glances. Looks this way, looks that way. Everyone wanted their backsides covered. Instructions requested. Instructions sent. Now, even Jason was out of his depth, but he coped. He maintained.

The ball spun once more.

I thought about Fritz.

How did the blunt, stupid, obedient German compare with Jason, the suave, polished, confident American pit boss? On almost every scale of human value, Fritz was the lesser man, and yet, for my purposes, Fritz was perfect. Jason, in his position, would start to get ideas. He'd find a way to threaten me for more than his agreed-upon share of the takings. He'd enjoy holding my life under his thumb.

Not Fritz.

"Number twenty-seven, red."

"Twenty-seven, twice," Jason said. His face was slightly pale.

"It's my lucky number."

"Yes. It would seem to be."

I noticed, then, that I was alone nearby this table.

The watching crowd had been pushed back by security men, and a velvet rope, held up on low metal standards, made this my own private gaming room.

"Hey, I appreciate the attention," I smiled. The publicity agent took another picture.

"Our pleasure," said a new voice. I turned. It was the floor manager. Just behind him was the casino manager. Their appearance reassured me, in more ways than one. It meant that I was dealing with the true money, the true power. These men weren't blow-dried movie-star wannabes like Jason. They were mature adults, pudgy and balding and sour-faced, nearly as unpleasant-looking as I am.

"Hello, gentlemen. I was just telling Jason, here, that I feel lucky. Damned lucky."

"Congratulations. We've been watching you. You're doing pretty well by yourself. Not so well by us."

"It's going to get worse. A lot worse. You see, this isn't my night to lose."

"Everyone loses, a little. You win some, you lose some."

"Not me."

The casino manager stood a little back, letting the floor manager do the talking. "Yes. We hear you've been calling yourself 'Lord Luck.' Should that mean anything to us?"

"Gentlemen, gentlemen. It's your roulette wheel. I only ride it, pirouetting about dizzily, waiting for the number to be called."

"Everyone has a 'system,'" the manager said. "Some work better than others."

"My system is unique." I paused, and tried to catch Fritz's eye. "Where is my bodyguard?"

There was a new flurry of hand gestures. The ropes were opened. Fritz came up to stand beside me. He and I looked at each other. It was no good. He was too close.

"Fritz. Go stand over there. By the pillar. Keep an eye on the crowd. I'm going to make one last bet for the night. Win or lose. Then we'll go."

"Okay. . . ." He looked the question at me.

I nodded, and thereby sealed my fate.

Fritz wandered back toward the crowd, making sure of his exit route, until he came to the place I'd indicated. I returned my attention to the manager.

"You're the big cheese here, aren't you? You call the shots? You're in charge?"

"Yes."

"Good. I'm going to break your bank. I'd like to put it all on number twenty-seven."

I'd deliberately spoken loudly enough to be heard. A gasp went up from the crowd. Even the high rollers weren't quite this crazy. There was over a quarter of a million dollars on the table. A payoff of thirty-five to one meant nearly ten million.

"I can't let you do that."

"Of course you can't."

"We'll let you bet half of it," the casino manager said. "That way, win or lose, you'll go home with a lot of money."

"Your funds are limited?" I asked, oh so sweetly.

A technician, dressed in a suit like all the others, was checking the wheel out, looking for signs of tampering. He found none.

"Our funds are good for a lot more than you'll ever win," snapped the manager. "We have a betting limit. That's how it has to be. It's for your protection as much as our own."

"I'll compromise. I'll put all but twenty thousand . . . on a two-number bet. Twenty-seven and thirty. Keep it in the red. Get it? In the red? Your bookkeepers won't be happy men, tomorrow morning."

I set the pile of chips—lovely oversized oblong cards in colors most people see once in a year's gambling, from across the room—squarely athwart the line between twenty-seven and thirty.

The operator spun the wheel.

Do you know how close the world came to nuclear war in October of 1962? The Cuban Missile Crisis. The Missiles of October. Kennedy and Khrushchev, eye to eye, toe to toe, with an arsenal of nuclear warheads—or "atom bombs" as they liked to call them back then—sufficient to kill every man, woman, child, and dog a dozen times over.

Khrushy backed down. But years later, when all the notes got declassified, the world felt a cold draft down its collective back. We'd come close, awfully close, to incineration. It was a miracle that war had been averted.

Miracle? Miracle, my soiled underwear! It wasn't a miracle. *We did go to war*, and in maybe ninety out of every hundred universes, the world was a maimed, radioactive wilderness, scoured clean of the pestilence known as mankind. But those worlds, you see, don't have us in them. We aren't there to perceive them.

The Ultimate Anthropic Principle. You've got to love it.

The ball dropped into the slot.

"Number thirty, red," the croupier called.

Oh, sure, in thirty-six out of every thirty-eight universes, he said something else. I sort of hoped that the two managers were close enough to me to be hurt, preferably killed, by the blast. Petty of me, I guess. On the other hand, if so, that automatically included them in my viewpoint. That was nice, too. They couldn't see any other result but my triumph.

There was some shouting, of course. A lot of trouble, especially when some clever detective fellow got them my real name. But, of course, gambling under a pseudonym isn't a crime. It took the Glory Hole's board of directors a couple of months to scrape together the money. I accepted their note for some, which would be paid on time. I took part of it in casino shares.

Newspaper headlines. Parties. Celebrations that never seemed to stop. Life went on.

"Boss?"

"Yeah, Fritz?"

"We're rich, aren't we?"

"Yeah."

"And rich is good, isn't it?"

"Rich is good, Fritz."

We sat at ease on the verandah of the house I'd bought. It was a real, old, Solid South plantation style mansion, deep in the magnolia-land heart of Georgia. It was afternoon, a pleasant, warm day coming to its end.

I liked it here. It was quiet. A man had time to think. I mostly thought about stocks and bonds. I sunk my money into futures and high-risk, high-yield instruments. Junk bonds to you, but to me, they were pure profit. Everyone wanted to know my secret.

I had a secret all right. A secret to die for.

"Are you rich enough to stop this?"

"No, Fritz. Give me the collar."

He did. I put it on.

"Does it feel right? Not too tight?"

"It doesn't matter how damn uncomfortable it is, Fritz. I'm just going to be wearing it for a few minutes."

"But that could be the rest of your life."

"Could be. Now, go and get the newspaper."

The rules were simple. If the stocks went up, he came back and told me the good news. If they went down, he pushed the button.

A few minutes later, he came back. He held the newspaper. "You were right again, boss. The stocks went up."

"They always will, Fritz. You make them go up."

"I do?"

"Yes. Because you would push the button. You *would* push it, wouldn't you, Fritz?"

"Yes. Because you tell me to, I will do it."

I held up a finger. "But only if the stocks drop."

"Only then." He sighed and seated himself by my side, gazing out over the water at the cypresses. It was so pleasant here. So quiet.

Fritz didn't approve of it when I ran for office. But he should have known, from the start, that it wasn't just money I wanted. I wanted power.

The funny thing was that I never lost an election. Not a single one.

Congressman.

Senator.

An unbroken series of primaries, culminating in a successful Presidential campaign. I wanted a landslide, but Fritz and I, discussing it on election night, agreed that any victory was victory enough. In the end, it was a squeaker. But I was President. President of the United States of America.

It was a good first term. The Congress quickly fell into line. There were only a couple of close calls. Fritz helped me with those.

Back when nuclear war was a possibility, they talked about the President having his finger on the button. They

didn't know that it was the President's bodyguard. Fritz was perfect, perfect in every way. I could not have picked a better man. Obedient, unimaginative, expressionless, and yet as perfectly sane as any man on earth.

He enjoyed riding with me in the limousine. He enjoyed sitting in the corner while my Cabinet met. He never perceived the detectable irony, either. He was billed as my bodyguard, and yet, in reality, he was the man who was charged with killing me.

Killing me, if I didn't get my way.

Are the universes infinitely divisible? Between any two, is there yet another? Or, as numerous as they are, are they ultimately like grains of sand, which are countable, at least in theory?

I read with amusement the story in the newspaper about a man who had gone into a casino in Atlantic City with a flat pack of explosives strapped to his chest. He'd put his money down on the roulette wheel, and, upon losing, blew himself to kingdom come.

"That could have been you, boss," Fritz said, seeing me lingering over the story.

"It could have been. But it wasn't." I looked up at him. We'd known each other for only a few years, but now, after so short a time, he and I were masters of the earth.

"It could have been," he persisted.

"Aw, hell, Fritz." I laughed, and my laugh hadn't grown any more pleasant over the years. "It *was* me, you know. I've left my brains on more floors than you could count in a lifetime. Who cares? Lives are cheap. I only care about the good ones. Let the bad ones go out with a bang and a splatter."

"Okay, boss."

He didn't understand. But he obeyed.

I raised a glass to the fellow in the news article. He was off on a great adventure. His universes were different from my own. I didn't begrudge him his discovery of my methods. There were universes enough to share.

My point of view was my universe.

In it, time passed. I made things come out my way. I made the Mars trip successful. I made the fusion project work. I built the Core Tap and the Moon Base and the Computer Mind. It was a golden age, and it would last as long as I was alive. All the sciences prospered, and all the arts flourished.

It was all my doing. All to my credit.

Mine and Fritz's.

It went sour, in the end, over some stupid vote in the World House about whether or not to deify me. My nickname was as good as official. Lord Luck, they called me. But was that a secular Lord, or a religious-type Lord?

I wanted full deification. A church, with rituals and sacrifices and music, and my face above every altar. The old-time Christians, Jews, Moslems, Buddhists, Hindus, and Atheists all got stuffy about it. They didn't mind honoring me, even venerating me, but worshiping me just rubbed them the wrong way.

So they put it to a vote, and Fritz stood by as the roll

was called, standing a safe distance from me, with his hand on the button.

The vote failed.

Fritz pushed the button.

Did you know that Semtex goes bad after a while? I don't know the exact details—I could look them up if I cared to—but essentially, the molecules are volatile. In time, they evaporate. When enough of them have gone, the explosive becomes inert.

The collar exploded, but with reduced force. It tore my head open, broke my spine, severed all the major blood vessels, and made a bloody demon mask out of my face. Fritz, bless him, was already moving forward to try to finish me off, but World House security forces, alerted by the bang, came in. They tackled him, stopping him only inches away from completing his task.

When I awakened, I wasn't in a hospital bed. I was floating in some strange sort of suspension. I thought it might have been water, but I found out, soon enough, what it really was.

It was an illusion. I didn't have a body at all. I'd died, sure enough. But there was enough of my brain left to be scanned, using some fancy nuclear-magnetic scanning thingie that my scientists—*my* scientists!—had come up with. It read the entire structure of my brain, atom by atom, and dumped the information into a computer, which proceeded to run an emulation.

I was dead. I *am* dead.

But my point of view lives on.

And that's how my story ends. So sad, too bad, a real sob story, boo hoo. I'm not going to die, not for a long time, maybe not ever, and that's how the damned Ultimate Anthropic Principle works. I'm not in control any

longer. Fritz is dead, although he broke prison and ran the World House a long and merry chase. Fritz is gone, but I'm still here. And as long as it is *theoretically possible* for my mind to continue to observe the universe, it will do so.

But that brings me to you.

Ever wonder why you were born when you were? What I mean is, why now, of all possible times? Why not back in the Old West, or when knights and crusades were all the big deal? Why not in biblical times, or when there were cavemen?

The answer is that only now, with genetic engineering and computers and cryogenics and all those other complicated things, only now do you have a chance of not having to die. You hear it, now and then, from big-domed philosophers of science. "This may be the first generation that never needs to die."

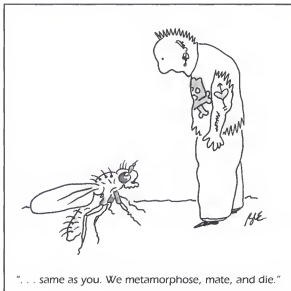
Well, maybe not the generation, but I'm not talking about generations. Not about groups. Not about anybody but one person.

You.

Think about the times you might have died. Rock climbing in summer camp, when you slipped and almost went over the edge. Swimming, when you came up under the pier and damn near drowned. In traffic, when the car bore down on you, but you jumped back out of the way just in time. You didn't even spill your ice cream. The time you touched the electric outlet and got that weird buzzing sensation through your fingers and wrist halfway up to your elbow.

You didn't die. Naturally you didn't. Do you have any idea, *for sure*, that you *can* die?

Did you think this was *my* story? ♦





# The Flowers of the Forest

Brian Stableford

The process of reconstruction that will return my lower limbs to their normal state is under way now, but I'm still a monster for the time being, in more ways than one. It isn't just that my body is so bloated, my pelvic limbs so obscenely gross and columnar. In a month's time, when the accelerating worldship reaches the outer limits of the solar system, I'll be like everyone else again, appearance-wise—but I'll still be different *inside*, where it really counts.

The medics don't think so, of course. They take it for granted that I'll readapt psychologically as well as physically. The psych's opinion is that my inner sense of being different—of having fundamentally *changed*—is a straightforward reflection of the physical



Illustration by Timothy Wilson

discomfort I feel by virtue of being back aboard the worldship while still burdened with legs and all the other adaptations that fitted me for life in a gravity well. She's wrong, though. I am different, and I always will be.

I'm not denying that I feel the physical discomforts, of course. On Quibor I weighed three times as much as I do now; the surface gravity of an Earthlike planet is punishing by comparison with shipspin. In spite of the corporeal reconstruction and the long months of training, a descent even to the most benign of planetary surfaces inflicts enough wear and tear on a worldshipper's system to reduce his life expectancy by ten or fifteen shipyears. It's not surprising that I feel like a fish out of water just now. But that has nothing to do with my thoughts, my knowledge and my *soul*. If physical discomfort and debilitation were all that mattered, no one would ever volunteer for a planetdrop, but whenever the ship makes an orbital stop there's always fierce competition to go down.

"It's a small price to pay," Gregor said to me when we first put in our applications. "A tenth of a lifespan, in exchange for the kind of opportunity that comes along once every three or four hundred years. It's a chance to do and see things that only one worldshipper in a million ever gets to do and see. It's a chance to touch *ground*, to return to our *roots*."

Gregor thought of it as a straightforward price to be paid; he hadn't even bothered to calculate the risks. Neither had I. But it wasn't mere recklessness that made us do what we did. Nor was there any dereliction of duty involved in our expedition into the rain forest. We'd completed our allotted work, more than a month ahead of schedule. Everyone on the mission agreed that we were entitled to something for ourselves, and everyone took the opportunity.

If you care to look back through the records you'll find that all parties of planetary descendants behave in the same way. Nobody goes through what we went through just to compile routine reports for the Hierarchy; everyone who ever went down to a planet had his own personal agenda, his own idiosyncratic desire to make the most of an unparalleled opportunity to experience life in the raw. Gregor and I just went a little further than most of the others.

Look at the records, and you'll find that every planetdrop our ancestors ever made resulted in *someone* missing the ship. Of course, legend and popular fiction paint an entirely false picture of the *reasons* why people miss the ship. We've all seen vidromances about planetdroppers finding true love on the surfaces of beautiful and exotic worlds, and deciding to stay rather than return to the worldship when the pick-up drones arrive, but those are just fantasies. Native females, however closely they approximate to human form, are nevertheless alien. In reality, I guess, planetdroppers almost always return to their ships, unless they die, or get trapped—but what happened to Gregor was no mere accident, no commonplace disaster. There was more to it than that, and you won't be able to understand unless you can grasp the essence of the planetdropper's dream, and the true mean-

ing of the myth of Earth and Home. You have to be able to see that the *real* reason men descend into gravity wells every time the worldship cruises through a system has nothing to do with the material and the data they bring back. All the stuff that goes into the official reports is just an excuse, just a pretense.

It's true that we sometimes learn useful things from our explorations of planetary surfaces—that our biotechnology occasionally gets a considerable boost from the discovery of some new genetic system—but that's just a bonus, not a fundamental *reason*. The attraction that planetary surfaces exert upon us is much deeper and more intimate than any merely practical motive. It has to do with what we *are*, in the core of our being. Our customs and mores, our ideas and habits of thought, are all the produce of worldship life, but we've only been worldshippers for two hundred generations; our ancestors were planet-dwellers for *twenty thousand*. Gregor was right in what he said. The process is a return to our roots, a recovery of our true selves. I may look like a monster just now, but I'm a uniquely *human* monster; this is the kind of monster that our forefathers were, in the days when they were innocent hunter/gatherers like the Quiborians—which they were for a hundred times as long as they were planet-bound progressives and worldshippers. People who apply to be planetdroppers aren't just volunteering for a nasty but necessary *job*. Gregor and I were embarking on a quest that was supposed to take us into the depths of our own inner being; a pilgrimage to discover the true meaning of what it is to be human.

Maybe we were crazy, but I don't think so. Even after what happened to Gregor, even after *everything*, I still don't think so.

At first, of course, it was very difficult down there. Training can't really prepare a person for the experience of living and working in three-times-shipspin gravity. The techs had remodeled our bodies and retuned our biochemistry so that we were physically adapted to local conditions, but they couldn't retune our reflexes and habits; we had to do that ourselves, as we went along. Everyone started off clumsy and stupid, and no matter how hard we'd trained and how hard we tried we *stayed* clumsy and stupid for months. One of the reasons planetdroppers always attack their work schedules so relentlessly, I guess, is that the only desire their minds can accommodate during the first few months is to get it over with.

Eventually, though, we got used to it all: the legs, the weight, the open spaces, the odours, the weather. It became, quite literally, *second nature* to us. Without even being consciously aware of it, we gradually became comfortable.

After three or four months, all those legendary things I was looking forward to when I first volunteered—sunlit blue skies and windblown rain; oceans and mountains; humanoid aliens, and multitudinous insects, and all the flowers of the forest—gradually became as magical and as fascinating as I'd expected them to be. The

hopeful dreams that had turned into nightmares turned back into hopeful dreams again. My alien flesh no longer seemed like a prison; it became an opportunity, a precious instrument of personal destiny.

It was the same for Gregor, maybe more so. There came a day when he said: "It was worth it. It really was worth it. This is *natural life*—the only real life there is. When we go back, we'll look on this as the time we touched the ground, the time we got in touch with what we truly are."

"Yes," I said, "we will." I meant it.

By the time all that began to happen our people had learned half a dozen of the local languages and befriended almost all of the local tribes. The natives had realized by then that we weren't gods or demons, but fairly ordinary folk, with whom they could get drunk and swap tall tales around the campfire. The Quiborians aren't progressives, of course; they weren't hungry to acquire the gadgets we had in order to change their lifestyles, and their interest in us was simple curiosity, not so very different from *our* interest in them. We all got along reasonably well.

The tribes we contacted were mostly plainspeople—like our own ancestors, the intelligent humanoid natives evolved in a subtropical grassland habitat—but some of them had gone back into the fringes of the rain forest, which formed a huge belt across the continent on which we'd landed. The fringe-dwellers regarded the deeper, uninhabited forest as the dark and magical heart of their world, and their collective imagination populated it with all manner of strange beings, natural and supernatural. The tales they told about the interior of the forest were the wildest and weirdest of all the fantasies the Quiborians owned.

I don't know exactly when I decided that my personal mission—the mission that I intended to undertake when the routine work was done—would take me into the heart of the forest. Maybe it was always at the back of my mind. I do know that the first time I mentioned the possibility, obliquely, to Gregor it immediately met up with a reflection and an echo. It was tacitly assumed, from that moment on, that ours was a shared purpose, and we laid our plans together, building desire into ambition with mutual encouragement.

We realized that we'd need help from natives who had some experience of the conditions we'd face, and who knew how to cope with the everyday business of finding food and staying healthy. We didn't anticipate any particular problems—we were immune to all the native viruses because the Quiborian genetic system isn't compatible with DNA—but still we had to be careful. We could eat most of the local produce, because our proteins are built out of the same amino acids as the Quiborians', and most of the simpler chemical constituents of our bodies are identical with theirs, but by the same token we could be poisoned by many of the things that poisoned *them*. We were also a potential source of food to many of their protozoan and metazoan parasites.

"It's not going to be easy to recruit the kind of help we need," I pointed out to Gregor. "We can't just *bribe*

guides and porters, because the natives have no concepts of exploration or employment. We have to find some way of hitching up with indigenes who are interested in going into the interior for their own purposes."

"It can be done," he assured me. "We just have to figure out a way of forming a common cause with the local priest-magicians. It shouldn't be too difficult to arrange a meeting of minds."

He was right. In some ways the Quiborians are very different from humans, but in others they're uncannily similar. They have three sexes, each one of which is "female" with respect to one of the other two sexes and "male" with respect to the other, so that their marital arrangements produce triads, multi-triads or open-ended chains rather than mere pairs. In any family the parents are mothers to some of their children and fathers to others. Their sexual organs are associated with their mouths rather than their excretory organs: the tongue doubles as the organ of intromission, their wombs are sacs that lie in front of the cavity that holds their lungs, and the lower jaw is hinged like a python's to facilitate birth. On the other hand, just as their basic physique is determined by the logic of their situation, so are their fundamental ideas and beliefs. They have heads with forward-facing eyes, hands with opposable thumbs and good stout legs; they reason the way we do, and they have magical and religious beliefs much like those of our ancestors. A meeting of minds was infinitely easier to arrange than any kind of intimate intercourse of the flesh.

The Quiborian tribes we contacted were very various in the details of their supernatural beliefs, but they all had specialist wise men of some kind to whom the spiritual welfare of each tribe was entrusted, and all these specialists had to leave their tribes for a while in order that they might be initiated into the particular mysteries of their various creeds. Gregor found out that it was the custom among one of the forest tribes that at a certain critical stage in their training their apprentice wise men had to go deep into the forest, in the company of the older men to whom they were apprenticed, so that the secrets of the ancients might be imparted to them.

As chance would have it, this handing over of magical responsibility, which only happened rarely—at intervals roughly equal to a fifth of one of our generations—was due at exactly the right time to suit both our official and private agendas.

"The apprentices come back alone," he told me. "They leave the teachers behind. As near as I can translate it, the old men are deemed to have 'joined the company of the elders.' That means, I suppose, that they've gone to a kind of Heaven. They're understandably vague about the details, but it seems to involve both ecstasy and immortality. It's a reward for the service that they've rendered their people, their ancestors, and their gods. The journey into the forest is a solemn and sacred business forbidden to laymen, but I think they might let us tag along, because we're outside their traditional categories we're not subject to their taboos."

Gregor was right about our immunity to their taboos. When he first hinted to the local wise man that we'd be

interested the old man didn't throw up his hands in horror. When we asked him right out whether it would be possible for us to accompany his party, his only reservation seemed to be that we'd have to swear not to tell the other tribesmen what we saw. He actually seemed to think that it would be a good thing for the "starmen with impotent tongues"—that's what they called us, as near as it will translate—to meet the supposedly immortal elders, so that the elders would have the opportunity to adjust their ancient wisdom to take account of us. I suspect that there was also a little intertribal oneupmanship involved, in that our hosts could tell their neighbors for the next few generations that the people who'd come down from the sky had made a point of paying their respects to *their* ancients in preference to anyone else's idols and fetishes.

We didn't tell our fellow planetdroppers much about what we were doing; the expedition was thinly spread about the territory by that time, and the others were getting into private projects or fascinations of their own. We just reported that we were going into the interior, and spun a line about collecting data and specimens. The others didn't ask too many questions, probably because most of their lines of enquiry were similarly phony.

When we finally set off we were a party of six; there was the older-generation magician from whom we'd sought permission, three apprentices, and the two of us. Apparently they always started off with a triad of magicians—one of each sex—but the hazards of life usually reduced the group to two or one by the time the hand-over became due. One of the old magician's original partners had died in an epidemic, the other had been killed in a small war. He confided when we got to know one another a little better that the three youngsters weren't really ready to take over, but said that he had to take them now because it would be a terrible disaster for the tribe if he were to die without having done it.

At that time I had only a sketchy impression of what this particular tribe's religion and its associated magical practices were like. I had grown used to thinking of those sorts of things in generic terms, as data for the records. I knew, though, that they had a particular reverence for flowers, and that they thought of their ultimate ancestors as godlike flowers. That may sound eccentric, but by their standards it was curiously plausible. All the languages of the Quiborian forest tribes have words for "flower" that are closely linked to their words for "mouth"—which makes reasonable sense in terms of their anatomy. A flower contains a plant's reproductive organs just as their mouths contain theirs. Every Quiborian plant has three different kinds of flowers corresponding to the almost universal bisexual pattern, each with a tongue-like "stigma" receptive to one kind of "pollen" that also produces another kind of "pollen" of its own; each flower, when it ultimately becomes a seed-pod, produces flowers of one of the other kinds.

It was reasonable enough in imaginative terms—however nonsensical it was in evolutionary terms—for unsophisticated forest tribesmen to believe that all extant spe-

cies, including their own, had been born from some magical plant. Out on the plain, where the grasses were all wind-pollinated and there were very few flowering plants, the natives tended to appoint mythical chimeras as progenitors of themselves and various species to which they were related as hunters or competitors, but in the flower-filled forest the people saw things differently.

Given that our tribesmen thought they were the descendants of a magical flower, it seemed fairly reasonable that they should also credit their hopes of immortality to a flower, so I wasn't unduly surprised or interested to learn that our expedition into the forest was represented by our companions as a journey to the place where a particular kind of magical flower grew. The name of this flower was complicated, being closely associated with the words that the tribesmen used to describe coitus, thus carrying connotations of physical union and orgasmic pleasure as well as the prolongation of life.

"Do you think there really is a flower of some kind?" I asked Gregor, once all this had been explained to us.

"I guess there'll be a real flower of *some kind*," he said, "which native belief invests with all kinds of magical significance and curative potency, but it'll probably be a perfectly ordinary flower of little or no intrinsic worth. You know how these things are." That was when he was being scrupulously realistic, though. He also had moods when he was more entranced with the essential romance of the idea. "Wouldn't it be a coup," he said once, "if we really could bring back the philosopher's stone in the form of an alien flower: a drug that induced a quasixensual ecstasy *and* made men immortal. It's the one real tragedy of our existence that our biotechnologists, for all their metamorphic artistry, have never made much headway in extending the human lifespan."

I was happy enough to play along. "That's two miracles already," I observed, "so you might as well credit the thing with the power to work just as well for humans as it does for its own favorite children. It's a pity that its gifts seem to be reserved for the wisest of wise men, though. Ordinary folk seemingly have to be content to live lives that are nasty, brutish and short—and two out of three wise men evidently perish before being able to claim their reward. If we did take something like that back to the worldship, you can bet your legs that it would be co-opted by the Upper Echelon. The likes of you and I certainly wouldn't get the benefit of it."

"Finding something like that would make us heroes," Gregor said airily. "We'd be elevated to the Upper Echelon overnight. And why should it be impossible? Do you know how many of the medicines we use aboard the worldship can trace their ancestry back to by-products of the plants of Old Earth?"

"I know how few can trace their ancestry back to the specimens brought back by ancient teams of planetdroppers," I countered. "Probably less than ten. Alternative genetic systems often throw up useful structural materials, but we're first cousins to the plants of Old Earth, biochemically speaking. *That* may look like a lily, but it's alien through and through."

I was pointing at a nearby bush, whose flowers were

indeed like lilies. They were every bit as beautiful by human standards as they were by the standards of the indigenes.

"I wish you could explain that to the stinging and biting insects," Gregor complained. "They seem to find my blood reasonably digestible, and their stings hurt me even more than they hurt our companions."

"A capacity for destruction is far more easily shared than the potential for improvement," I reminded him.

I could still speak lightly of such things during the first few days of the journey, but as we went deeper into the forest it became increasingly apparent that Gregor had a serious problem. The forest was full of insect life, and many of the insects were bloodsuckers. Although they could draw far more nourishment from the animals that lived in the forest, the breakdown products of human blood were neither entirely useless nor poisonous to them—and in any case, their instincts directed them to attack anything of a suitable size. In adapting us for life on the surface, our biotechnicians had given us skins that were not unlike the indigenes' in color and texture, and the insects attacked us as frequently as they attacked our companions. These bites were no more than a nuisance to me, but it gradually became apparent that they were having a worse effect on Gregor.

At first Gregor's reaction seemed to be straightforwardly allergic, and it responded well enough to our standard anti-allergy drugs, but that wasn't the end of the matter. He became increasingly prone to fits of fever and to exhaustion. The medicines we carried with us countered the symptoms well enough, but were ineffective against the underlying cause—and so, by slow degrees, Gregor grew weaker.

When I became anxious about him, I tried to find out from our companions how far we still had to go before we reached our destination, and how many days would pass before we returned to the tribal territory, but the natives' arithmetic was very rudimentary. Their counting went one-two-three-few-many, and the difference between "few" and "many" depended on the context. At first I assumed that the old man's assurances that we had "a short way" to go and that we would return in "a few" days meant that there was no need to worry, but it transpired that this was one of the contexts in which "short" and "few" covered a wider spectrum than usual. Unfortunately, the further we went the more rapidly Gregor's health deteriorated.

I guessed that one of the biting insects had injected into Gregor's bloodstream some local equivalent of the malarial parasite that, although unable to complete its natural life cycle in his alien cells, was nevertheless capable of obtaining sufficient nutrition from his tissues to multiply. Perhaps it would have been harmless if it hadn't been in an alien environment, and perhaps the toxins it was producing were merely accidental by-products of its unusual diet, but Gregor was certainly suffering, and our medical kit had no means of countering the particular poisons that were harming him.

I asked the wise man if he had medicine to cope with

Gregor's problem, but all he could come up with was a foul-smelling potion with which to anoint the patient's forehead and stomach, and a ritual dance. The dance was elegant enough—I taped it, dutifully—but it wasn't the slightest help to Gregor.

I called the others and told them we were in trouble, but the expedition had no aircraft of any kind, and such vehicles as we did have were too flimsy to make progress through the forest undergrowth. The advice we received was, as I expected, that we abandon the journey instantly and set out to retrace our steps.

When I mentioned to the old man that we might go back, he flipped his nose—it wasn't a rude gesture, more like our shoulder-shrug—but made it clear that if I decided to do that, Gregor and I would have to make the journey alone. He had a sacred mission of his own to fulfill, and nothing could make him abandon it. I could understand his point of view.

The apprentice magicians were quite willing to help me carry Gregor once he was too ill to walk—indeed, they constructed a litter with remarkable speed and efficiency—but they would only carry him one way: onward to their own destination.

I had no choice. I knew that I couldn't get him back on my own. I had to hope that his body had the resilience to survive and recover from the poisoning if he did not have to exert himself walking.

Onward, therefore, we went.

Even in the midst of my anxieties I couldn't help noticing how very beautiful the forest was.

It wasn't so much the individual flowers, because the range of their shapes and colors and sizes wasn't much different from that of the flowers I'd grow up with on the worldship, but their sheer riotous *confusion* was something entirely alien to the orderliness of worldship life. Worldship ecology is controlled, entirely under human dominion, but in the Quiborian wilderness things are the other way around. The Quiborians aren't agriculturalists; their management of the ecology is absolutely rudimentary. Their presence and ways of life affect the environment of the fringes and the grasslands, because that's their natural habitat, but in the deep forest they're strangers, moving through a landscape to which they're irrelevant, to whose dominion they must submit.

Gregor and I were in the same situation; we too had to submit to the awful, beautiful dominion of the flowers of the forest.

The air of the forest was rich, warm, damp and full of odors. The trees were ten times the height of a man—even a man with legs. All the trees bore flowers, and the creepers and vines that borrowed their branches for support mingled their own flowers with them, as did the low-lying vegetation that grew in the open spaces where the sunlight filtered through the outer crowns. Even the parasite-plants that grew in the darker coverts and on the huge boles of the older trees put forth little blossoms. And it wasn't just the flowers that were colorful: their pollinators were often just as spectacular. There were brightly plumaged little birds with fast-fluttering wings,

and countless insects whose transparent wings shone iridescent in the dappled light.

Some of the flowers were clever mimics. In the ecosystem that gave us birth it was common for harmless and edible insects to mimic those that had stings or were poisonous, to discourage potential predators, but the Quiborian ecosystem is differently balanced. The Quiborian forest is far richer in insectivorous plants than any Earthly forest, and it's the plants rather than the insects that go in for deceptive mimicry. I found several species of flowering plants that mimicked ones from which the insects could draw nectar, but whose stigmas were adapted as snares, which could entrap visiting insects by coiling around them and then send filaments into their flesh to draw out the nutrients.

We saw very little of the larger animals of the forest, most of which were nocturnal, but there were lemuroid creatures that swung through the canopy, hooting and chattering. We sometimes saw triads of medium-sized herbivores like little deer with coats dappled for camouflage, usually with litters of young in train. Once or twice we saw predators equivalent to Earthly big cats, but they mostly stayed up in the trees by day. At night we sometimes heard them screeching, but they never came close to us. The wise man put it down to the power of his amulets, but I think they just knew better than to attack parties of armed men.

All the apprentices carried bows and arrows, and they were very skillful. They never had to use them defensively, but they frequently shot ground-nesting birds for supper. Gregor and I shared the meals that they made; their meat was quite adequate to human nutritional needs provided that we kept up with the standard dietary supplements. The birds didn't taste very nice, of course, but when you're living rough you soon get used to treating eating as a purely functional matter with no aesthetic component.

It would all have been wonderful, if it hadn't been for the bites and the stings, and Gregor's illness. He did seem to improve a little when he no longer had to walk, but the improvement was temporary. I fed him lots of fluid to protect him from dehydration—there was no shortage of water in the forest, and our sterilization kit was a great boon both to ourselves and the natives—but he found it increasingly difficult to keep solid food down and he was losing weight rapidly.

To make matters worse, the old man was also beginning to show signs of distress—and he was the only one who knew where we were going.

"Everything is good," he said to me when I tried to find out what would happen if he became too ill to continue. "Soon we meet the ancestors. Soon I am one of them. End of all disease, end of all pain. Everything is good."

I spoke his language reasonably well by then, but the language itself set limits on the sophistication of possible conversation. It simply didn't have the words to frame the questions I really wanted to ask, and the old man couldn't or wouldn't make an extra effort to explain. It was no use trying to quiz the members of the triad; they

were looking forward to their initiation into the mysteries, but they didn't have the least idea what to expect.

By the time we reached our destination the old man was barely coherent, Gregor was barely alive, and I was beginning to suffer myself. It didn't help that we had to climb a long, steep mountain slope, and then descend into a crater. The climb took a lot out of me, and the old man barely made it.

The crater was presumably volcanic, but the volcano had been cold for millions of years. The air was a lot cooler up there, and the forest was thinner because the ground was much drier—except, I suppose, for the area around the shores of the central lake that I glimpsed from the crater's rim.

Inside the crater, of course, we found the flowers from which the tribesmen thought they were descended, and to whose care they eventually returned their wisest and best. There was no temple and no garden; the things just grew wild wherever their seed happened to fall and find the necessities of life. People like us, I guess, might have tried to gather them together and planted them in groves, but not the Quiborians. The Quiborians let them find their own pattern.

The ancestor-trees were scattered throughout the crater, although they weren't all, in the strict sense, "ancestor-trees." The first members of the species I saw weren't among the sacred ones, although I had sufficient imagination to know, as soon I'd seen one, what remained to be seen.

I guess the trees on which the sacred flowers grew were simply the most successful of the many predatory plant species that lived in the forest—certainly they were the biggest. Maybe their flowers had started out as mimics, like most others of their kind, but had eventually found it more profitable, in terms of the cutthroat marketplace of natural selection, to give up subtlety in favor of brute force.

When they were closed the flowers of the ancestor-trees were fairly unobtrusive, but they were mounted on long, snakelike stalks that could lower them from above with some vigor, and when they opened out—which they could do with remarkable rapidity—they had stigmas that were very long and equally snakelike. These were powerful enough to hold on to most of the animals of the forest, including the deerlike herbivores.

High in the branches of that first ancestor-tree, half-hidden by the discreet foliage, I saw half a dozen species of animals I'd never seen before, plus a deer and a couple of lemuroids. Each one of them must have been hauled up into the crown at some time past for consumption at leisure. A couple of them were little more than husks, and a few bones scattered in the humus beneath the tree suggested that the remains of a couple more had been let fall—but not recently. Most of the tree's captives—I counted eleven, although there may have been one or two small ones invisible in the higher parts of the crown—were still alive.

At first, I couldn't understand why so many of the tree's captives were alive. The set-up made me think in-

tially of web-spinning spiders, which bind their prey tightly and inject a digestive poison that liquefies their insides, ready for drinking. But that was the wrong analogy; the relationship between the trees and *their* prey was more complicated. I realized fairly quickly that the trees were actually *feeding* their captives with a kind of nectar, partly to keep them alive and partly to maintain the production of the blood that their intrusive filaments were leeching away. It was domestication rather than mere murder, like keeping cows for milking.

I'd never noticed the mimic-flowers treating their insect prey this way, but that was just a failure of observation. On the way back, despite my deteriorating health, I managed to confirm that it was a routine procedure, which the ancestor-trees had carried one step further.

I was immediately able to work out, of course, what the old man had come to find, and what he had come to do. Before I encountered the first of the *real* ancestor-trees, I was quite ready for the sight of it.

Some, at least, of the tribal wise men *were* still alive, and had been preserved by the clever metabolism of the predator-trees for many years longer than they could have lived unaided. They lived in thorny cages of flesh high above the ground, their flesh penetrated by hundreds of vampiric rootlets; but they lived without disease and without discomfort, and retained their ability to think, to dream, and to converse with their neighbors.

Eventually, no doubt, they died like others of their kind, like all the other victims of the trees. While they still lived, though, their lotus-eater existence was not without curiosity or purpose.

Sometimes the elders were only two or three to a tree, but they were usually more crowded. The wise men evidently didn't like to commit themselves to trees without fairly near neighbors, and those who were within the branches of one captor were always close enough to at least one neighboring tree to be able to converse with its inhabitants. I suspect, although I can't be sure, that messages could be passed along a line of communication from any part of the strange community to any other.

For some time after I first realized what was going on, it seemed slightly absurd. I couldn't quite see the biological sense in it; it simply didn't seem economical for the tree to feed its prey at the same time as it fed *off* its prey. We nourish our fields and our tissue cultures very carefully indeed, so that we may mine all the more sumptuously upon their produce—agriculture and animal husbandry gave our ancestors the first of their two great leaps forward, turned them into progressives, and set their feet on the road to the stars—but we don't feed them with the produce of our own bodies; that would be sending the nutrients round in a futile circle.

In time, though, I began to see the sense in it. I explained it all to Gregor as best I could, while he was still in a state to listen.

"The ancestor-trees *do* consume their captives, little by little," I told him. "They discard what's left when they're all used up. But they work at a tree's pace, in the context of a tree's lifetime. I don't know how old these par-

ticular trees are, but I suspect they outlive the tribesmen by a factor of two or three hundred. It makes perfect sense for them to eke out what is, after all, only one of two sources of nutrition—they have photosynthetic leaves too, of course. The energy-economics might be eccentric, but there *is* profit in suckling their captives on a kind of nectar that keeps them alive and disease-free, so that they can supply the tree with all kinds of nutrients that it can't make for itself. I'd call it symbiosis except that none of the captive animals except the tribesmen gets any advantage out of it. It evolved as parasitism pure and simple—but in the case of the sentient humanoids, there's a kind of payoff in being parasitized. It's not so much *longer* life as *more leisured* life: the acquisition of time that's useless for anything except thinking, but certainly isn't to be despised by thinking beings."

Now that we were no longer on the move he rallied a little, and he was able to take a keen interest in the trees.

"There's a certain irony in the fact," he mused appreciatively, "that while the humanoid Quiborians haven't yet developed agriculture and animal husbandry—and perhaps never will—the ingenious flowers of the Quiborian forest have taken advantage of a freak of natural selection to domesticate *them*."

The trees seemed to look after their captives pretty well. The nectar was obviously a more than useful food, and the stigmas and stalks that wrapped around the captured animals were mounted with huge blood-red thorns, protecting the prisoners from raids by animal predators and scavengers.

"It would all be different, of course," I said to Gregor, "if the tribesmen were progressives like us. They'd soon have started thinking about the nectar as a crop and as a product. Then they'd have started cultivating the trees, feeding them on animals, selecting for higher yields, exploiting the life-extending panacea for all it was worth. But the tribesmen aren't progressives; they accept nature as they find it, and offer themselves *to* it instead of breaking and bending it to their will. Hence the elders: willing human sacrifices, preserved by man and tree alike with care and reverence."

Our discussions regarding the trees were all like that to begin with: general, impersonal, and seemingly indifferent. But we both knew well enough what we were doing, and why we couldn't possibly be authentically indifferent.

The tribesmen's mythology was exaggerated, of course: the clever flowers of the magical trees didn't confer immortality, and the euphoria they gifted to their victims probably wasn't "ecstatic," although I can't honestly claim to know *what* might constitute ecstasy for three-sexed Quiborians whose tongues doubled as sex organs. As tribal idols go, though, the magical god-flower had a lot to offer its worshipers—far more than any of the idols *our* ancestors chose to worship.

The trees consumed their captives by slow degrees. Their heads and torsos remained longest unaffected, but their limbs atrophied soon after capture, and were gradually

reabsorbed into their bodies. The pattern of this induced metamorphosis was presumably connected with the fact that prisoners without limbs were easier by far to hold, and that continuing life depended on the maintenance of the brain. From the viewpoint of the intelligent captives, however, it was a uniquely convenient system, maintaining the mind while slowly diminishing the distractions of the flesh. Because of this preferential wasting of the limbs, most of the ancestors hanging in the trees were virtually legless. Gregor and I were inevitably reminded of our own bodies: the "normal" bodies that we had temporarily abandoned in adapting ourselves for planetary life.

I had no wish to intrude upon the business that the old man and his apprentices had with the elders of their tribe, and while they went about their business I sat apart with Gregor, explaining the last elements of the mysteries into which I had been so unexpectedly initiated.

"They're really very beautiful, Gregor," I told him. "Horrible, certainly, but so awesomely majestic in their aspect that even the horror of it becomes beauty of a kind. There's nothing else like them in our known universe—unless something lurks unread and unremembered in the dry, dead records of past planetfalls."

"I don't need persuading," he answered faintly. "I understand the situation." He knew perfectly well that he couldn't make the return journey. He knew that the choice before him was absurdly simple, and that there was nothing to be said for death, by comparison with an experience no other human had ever had before. He knew that he had already missed the ship, and that the only journey left for him to undertake was a far stranger voyage than ours, into the alien unknown.

There were only two questions to be settled, and both had to do with the problem of loneliness. I didn't have to go in search of the old man to put the first of them to him; he came to me, despite the fact that he was hardly able to walk. He *was* a wise man, at least by Quibonian standards, and a kind man too.

"Your friend is not one of us," he said—although he had to use a word for "marital partner" because his language had no other equivalent for "friend." "He is not a child of the flower." They were statements of fact, not refusals. I wasn't disheartened by his words.

"He is not a child of the flower," I agreed. There was no way I could tell him that in a strictly literal sense, *his* people were not descended from this or any flower, but from the forest lemuroids.

"But he is not of the tribes of the grassland, which have forgotten the flower," said the old man judiciously, "and he is a wise man, of sorts."

"He has much wisdom in his head," I agreed. "Your ancestors might learn from him. Let my friend join your elders, and live among them, in the heart of their small tribe, so that he might share his wisdom with theirs. Let the elders accept him as one of themselves, as one of their company."

It was the longest and most difficult speech I had ever made in that alien language. I hoped it was the best.

"He is a starman with an impotent tongue," the old

man confirmed, "but he is not a grasslander. There is something in him of . . ."

The last concept was too complex to be easily translatable. The word was the equivalent of "human being," but it was also related to the words for "flower" and "mouth" and "three-ness."

"I have spoken to the ancestors," the magician went on. "I too am numbered only one instead of three, but they will take me into a company and your friend also."

The word I've rendered "company" also had a lot of "three-ness" about it, and a status inflection. I suppose that to them it wasn't unlike an offer of instant promotion from vent-end dirty-lunder to Upper Echelon info-tech. In fact, "not unlike" may be ungenerous.

"What about me?" I asked—which was, of course, the second question. "Could I stay too, if I wanted to?"

Gregor, I know, would not have approved of my asking. "Don't be a fool," he would have said. "You may not be a hundred percent fit, but you can still make the ship. You still have a *real* life to lead. Don't even think about staying." He'd have said it no matter how desperate *he* was for me to stay, no matter how lonely *he* feared to become. I honestly don't know what I'd have done if it had just been a matter for the two of us to determine. But the old man had a firm opinion.

"You, he and I are *not* three," he said, meaning not a *triad*. "He has no strength left; you are strong enough. You must help the young ones. They are not ready. They are better if you are with them."

It was a great compliment, in its way. And I knew that Gregor wouldn't be alone: he'd have half a dozen living individuals close at hand, and many other neighbors just a shout away.

"Look after him," I said to the old man—or tried to say, although he clucked a little to tell me that I wasn't making sense, presumably because his language had no word for "looking after" that was not connected with parenthood and child care.

"The stars are flowers," he told me earnestly. In his worldview, of course, they were. "Although his tongue is impotent, we are of the same starborn company."

"That is the truth," I said.

I wasn't lying when I agreed with the old man. We're all the children of ancient supernovae. The elements that make up our bodies were seeds born from the mouths of primal fire. We're *all* of the same starborn company, in flesh, in body and in mind. I really believe that; and that's why I don't feel bad about what I had to do.

I can't tell you exactly how I felt when we gave them both to the ancestor-tree. The flower took them very gently, and didn't try to make a grab for anyone else. The young magicians dressed all six of us with pretty blooms, and we sang and danced for an hour. I didn't know the words or the steps, but I improvised as best I could, until I was too sick and tired to caper any longer.

The elders sang with us: all of them. Their voices filled the forest, and echoed from the rocky walls that dressed the crater's rim.

Gregor was very quiet afterward; when the triad took



me away he was better able to speak, and he was at peace. He was feeling no pain—I'm sure of that.

"Goodbye," he called after me. "Good luck. Say hello to the void for me."

"I will," I promised. I wept a little, but only for the pain of separation, not out of grief.

He wasn't dead, after all. He wasn't even lost.

There was no absolute guarantee that it would work, of course, but at least the tree hadn't spat him out immediately, and I figured that if the local biting insects could nourish themselves on his blood, so could the tree. I also told myself that whatever happened, he was certainly no worse off up there in the branches than he would have been buried in the shallow tropical soil. It was all true.

I can't make any guess as to how long he might survive, if he's still alive. The old man and the elders had no way of giving me a clue, given their rudimentary counting system. But that's one of the things Gregor may be able to teach them, if things work out. I'm pretty sure that some of the elders had lived three or four times of their own natural lifespans as guests of the trees. That's enough to learn arithmetic, and a lot besides. In time, perhaps, Gregor might be able to teach them chemistry, physics, cosmology—anything their own thinking can grow to embrace. I don't say that he's a certainty to convert the tribesmen to the cause of progress, but I think there's every chance that he'll give them the opportunity to become progressives if that's what they decide they want to be. If the Quiborians ever get around to building workshops, there's a good chance that the flower that gave birth to the chain of events will be the flower that made Gregor captive, and nourished him for the duration of his second life.

That's a better destiny, in its way, than I'll ever find, out here in the comfortable void. He'll have to pay the price in good red blood, and he'll have to hope that the sacrifice is acceptable, but if it is he might outlive us all. If he does, he has the chance to add his wisdom—*our* wisdom—to the traditional lore of one of Quibor's tribes. Gregor isn't a man any longer; he's an *elder* now. Impotent mouth or not, he has a chance to make a difference to the history and the destiny of the people who befriended us. Maybe they won't listen, and maybe they

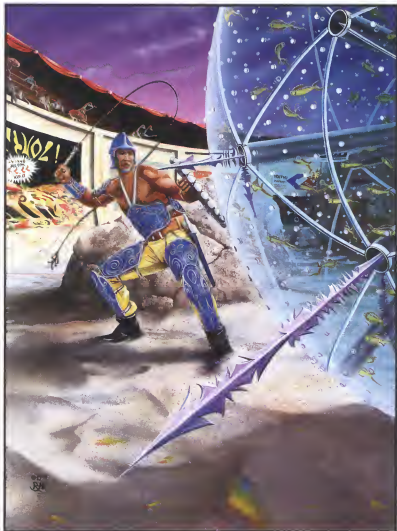
won't understand, but there's just a chance that we planted a seed that will grow.

Maybe there'll be even more to it than the creation of one more set of humanoid progressives en route to worldships and the freedom of the limitless dark—because what we found on that mountain is something that is, as far as we know, absolutely unprecedented. A *plant* formed by the forces of natural selection to be a farmer of animals, including sentient animals. I left Gregor to be the fruit of a tree that already had eight humanoid captives, and when I think about that entity as a whole, rather than simply as the sum of its parts, I can see unique evolutionary potential in it. It's a new kind of association of species: a tree that has acquired brains. In time . . . who knows what the evolutionary future of that compound being might be?

The Quiborian wise men saw the unique potential in that association; *they* knew when they discovered the ancestor-tree what superhuman implications it had. They're wrong about its role in their own origins, and about most of its supposed magical powers, but they're right to see it as a remarkable gift of nature, as an opportunity for they and their descendants to be and to become something very different from and something much finer than the people of the grasslands. They may be primitives, but they're not fools. They taught me a great deal, about the universe we live in and about our place in it; they taught me that there's more than one way to be rid of useless legs, and that ours isn't the one and only way forward. Gregor got a chance to be part of that, and I can honestly say that I envy him, at least a little. I dare say that it was he, not I, who came out of our adventure best.

Not many would agree with me, of course. Most will doubtless side with the medics. They'll look at me and think: "He's a monster! He's a madman, crazy enough to grow legs! How can we take seriously anything he says?" I am a monster; that's undeniable. I did grow legs, so that I might go down to the bottom of a deep, dire well, far away from the comforting darkness of the space between the stars. But I tell you this: *I have touched the ground, and I have looked into my soul and found the roots of my being . . . and you, who are faithful children of the friendly void, have not.* ☸

# Out of Their Element



**Geoffrey Landis  
and  
Jorj Strumolo**

In the arenas of Mything, the death duels are open to all contenders. Anything goes. The loser dies—hopefully in a suitably exciting manner—and to the loser's heirs goes whatever small fee he/she/it had worked out with the spectacle managers. To the winner goes a large cash prize, along with a cut of the betting payoffs. Generally the winner is assured of at least a million standards, and, in the case of contests between many-time winners, as much as ten million, payable in lovely, negotiable black crystal.

But I am only a first-timer, fighting this duel because I am desperate for money (and, let's face it, probably more than a little insane). I'd practically had to beg to be scheduled in one of the three inter-round

Illustration by Rindy Asplund-Fath

bouts that take place between main events. I'd also paid some stiff bribes to be bumped up the list to fight today, rather than sometime next varra.

But time is important. The medtechs have assured me that if Joella doesn't have her operation within ten days, she won't survive the month. And they want their money up front. So the risk is worth it. If I live, I'll have the money; if I die . . . well, a life without Joella isn't really worth living. No more picnics on the broad top of Mount Ketarra, huddling together in the cool breeze and seeing our dreams in the shapes of the clouds below; no more galloping across the high plains of Brozaal on steeds as swift as the sunrise. Better no more anything, than to live with such memories, alone.

So here I stand, one hundred eighty pounds of brown skin, brown eyes, red-brown hair and shaky nerves. Six feet of uncoordination and perspiration, powered by a too rapidly beating heart.

I wonder why my opponent is fighting this death duel. I rather hope I'll never know. Me, Trad Brendan: murderer of minnows.

I swim/roll back and forth nervously. My three hundred eighteen bodies, fear-yellow, swirl in agitation about the inside of the oversized travel sphere, maneuvering around the heartglobe and its twelve support rods with quick, darting movements. The specially modified sphere—a complex device despite its apparent simplicity—rolls to and fro on the hard sand floor of the vast arena, propelled by the tiny spinner banks studding its surface. That surface has me worried. Sixteen of the curved triangular plates are glasyll, transparent and harder than steel. But two are plastic, and could be punctured, to let my precious lifewater leak out; another two are glass that could be shattered, to spill my bodies out onto the dry sand to gasp and die under the eyes of strangers who had paid to see death.

But I need the money to continue my work, and to me that is worth more than life itself. It had taken a full varra for my name to rise to the top of the lists, a varra that I'd used to convince myself that what I am now doing is *not* counter to everything I stood for. Still, had any other way to obtain funding come up, I'd have withdrawn instantly. But nothing had.

Humans! What do I know about them? A species notorious for unpredictability. But they, too, are sentient individuals. I could only hope that my opponent's reasons for fighting are not as noble as my own. It would be some small consolation to know that I, self-professed pacifist, had "only" killed a foolish glory-seeker. Me, Shaswee b/Shwell, indigent scientist, pacifist . . . and professional warrior.

I could only hope that my opponent's reasons for fighting are not as noble as my own.

The arrangers of Mythung's death duels took pride in their craft. They chose the contestants, the weapons and the battle fields to provide a maximum of variety and excitement for the paying customers. For this inter-round minispectacle they had chosen a human and a skola,

who would fight on a wavy-floored trisector covered with sand and boulders. The human wore light armor-plas and was equipped with small weapons: short sword, metal throwing balls, an open-weave duralloy shield/snare, and a fleximetal whip. The skola was equipped even more simply: a not-quite-imperious rollerball with twelve retractile spikes. Neither individual was a professional. Neither was adapted to the environment, for there was too much gravity and heat for the human, and maneuvering on land was alien to the pisciform skola.

Together with the other two inter-round matches, the human-skola duel should provide a profitable spectacle for the owners of the New Kyndar Arena of Conflict.

I stand with my back to the glasyll wall, scuffing the armored toe of my sandal into the iridescent sands. Behind me I hear water being pumped in preparation for the ralomeer-turlap combat scheduled in the arena-third behind the wall. Across the huge pie section, my opponent rolls up and down the length of the far wall. When the other two arena-thirds are ready, the klaxons will sound and the combats begin.

Through the dome, a blue-white sun blazes like a plasma arc in the fuzzy purple sky. Already the sweat rolls down my body, stinging in my eyes, prickling and itching on my forearms.

I look over the crowd, now milling noisily, waiting for the show to begin. The races that fly—dark, batlike fyxons, slender voltreks, magnetic thevs, and the rest—are mostly clustered behind the part of the arena that will hold the fight between the small but tenacious thev and its ferocious tzudekron opponent. Behind the next sector are most of the aquatic races, most of them out of sight, watching the combat from water-filled private booths. A few, in a variety of travel devices, watch from the tiers: globiform loruls, cetaceans in outlandishly filigreed cubes of various sizes, and others I'd never seen before.

The crowd that sits behind my arena-third is composed mostly of land dwellers. But despite the fact that in the League of Civilized Worlds there are twice as many land-dwelling races as air and sea dwellers combined, the crowd is sparse. Just a few of the normal bipeds: long-necked qel with rainbow plumage, bearlike lings in white cold suits, and a smattering of more interesting forms, like twelve-legged liri and brightly painted robotic xavels.

I will try to give them a show to remember.

It helps—some—that my opponent is so completely different from a human. The skola is nothing more than an overeducated school of fish in a huge, rolling fish bowl. A fish bowl with meter-long steel spikes. I try to recall what little I know about skola. They had originally evolved on N'khona, a planet with a single shallow ocean, a well-oxygenated sea teeming with life. Competition for ecological niches was tough, and the planet had evolved the skola, one of the most unusual intelligent lifeforms known. No individual fish in a school was intelligent in itself, but each school was a single sentient being, a whole that is more than the sum of its parts. On Earth, many species of fish had evolved to the point where a

school could best be considered a single individual, but none had ever approached intelligence. I briefly wonder how they had learned to make fire and use tools, then discard the speculation for more useful thoughts.

I heft my snare/shield experimentally. If I can use it to snag a spike, preventing it from retracting, it would hamper my opponent's mobility. I could then try to discover the vulnerable panels. Of course, to do all this I would have to grapple with the rollerball, risking being skewered. Perhaps it would be better to use the balls and hope for a lucky hit on a glass panel.

*Braa-aa-ah!* The horns. No time to think now. Here she comes, full speed. What have I gotten myself into?

Finally I manage to calm down, my bodies changing from fear-yellow to a mere nervous-pink. I review my strategy. I must fight quickly, since the power crystals which drive my rollerball are deliberately limited in energy reserves, and the same crystals that power the ball also keep my lifewater fresh. The organizers had ensured that, one way or another, the fight will finish before the main event. I must grapple with and puncture the human, while at the same time protecting my vulnerabilities, both physical and psychological.

The travel sphere is a tool for access into a hostile environment, not a weapon. The human is in his own body, and intimately knows his capabilities and weaknesses. This match is not fair, I think. But the arenas of Mythung are well known to be incorruptible. They make enough profit without any need for cheating.

I think of N'khona, devastated by war. I think of the millions of skola fried in the bombardment of Issvhan Shallows; of my spawning mate, Tlaswee, dying of radiation poisoning, his bodies slowly turning death-grey and floating to the surface, his intelligence gradually fading as his body count dropped below critical. I remember how I tried to comfort him with memories of how we frolicked at Whisper Bay; the games we'd played there in the reefs. While Tlaswee lived, I too had been truly alive. But the war had prevented us from the joy of uniting into a single being and producing new life. For the sake of millions, I must prevail. That type of warfare must never happen again. For the sake of Tlaswee's memory, a human must die.

*Braa-aa-ah!* The horn. I send a score of my bodies inward to work the delicate controls of the heartglobe. Glistening concentration-silver, they engage the spin disks, pulling angular momentum out of the quantum spin state to set the rollerball in motion, ready to deploy spikes as necessary. The uneven ground makes progress difficult, and I have to detour around the boulders, slowing me down yet further. Still, I am almost halfway across the trisector before my opponent reacts.

He takes one of his balls and throws it. A glancing blow, but one that could have been deadly had it hit a glass plate. I slow and angle in, seeking to protect the glass panels. Seeing me slow, the human advances, sword outthrust awkwardly and shield held loosely. He seems unfamiliar with his weapons, perhaps something I can turn to my advantage. His colors are distracting:

weapons the color of concentration, armor blue as rage, skin determination-dark.

He is close, perhaps twice his own body length away from me. I stop to size him up. He likewise halts, and stabs at my sphere with his sword. I pivot the sphere to interpose a spike, though the panel he'd attacked was not a vulnerable one. "Give up, you coldblooded can of slimy sardines," he shouts, bashing ineptly at a glass panel with his sword. I don't know whether he is speaking to me or to himself. I search for the vocal output control, and manipulate it with one of my bodies.

"No."

He jumps slightly at the sound, obviously unaware that the sphere had been equipped for vocalization. "Skola! Why are you doing this to me?" He continues to circle, making half-hearted thrusts with the sword. I rotate the ball to follow.

A stupid question. "For the same reason as you, I expect. I need the money."

"I need it more." He makes another thrust, more energetic than his last.

I don't even bother to parry. He tries to capture one of my spikes with his shield/snare, but I retract it quickly, causing him to stumble. My bodies vacillate between amusement-purple and curiosity-gold. The purple fades when he continues. "If I cannot get the money for an operation, Joella will die."

So the human, too, had entered the arena for an altruistic reason, making it even harder for me to justify my participation. "This is your mate?"

"She will be. If she lives." This brings on a vicious flurry of sword cuts. I project a spike and do a rapid partial spin, knocking the sword from the human's hand and sending him to his knees. Once more I have the chance to kill, but again I hesitate.

If I am to win the duel I will kill not one, but two beings. Yet it must be done. I think again of Tlaswee. Every varra that the war continues, a million beings die. The lives of one, or even two, are of little importance. "I do this for the greater good. I am a pacifist." Even to me, the words echo falsely.

"Then die, damn you!" he shouts. He staggers up, backing away from my rollerball. With an angry yank he pulls the whip from his wide belt and flails my sphere, but with no spikes protruding for the whip to catch, and the glass segments positioned to the rear, it is wasted effort. I decide to wait. Let him make the next move; I still have substantial power left.

Only in trisector three were the two opponents so far undamaged. The fight was drawing little interest, and—worse—not much betting action. The arena manager stroked a tusk contemplatively. Skola rarely entered the duels. Maybe next time they could try letting the skola swim free, along with several of the tool-creatures they sometimes controlled as their hands.

You're incompetent, Trad, I think to myself. Joella's depending on you. Joella, with eyes as dark as her soul is bright, and mind as sharp as her voice is soft. Joella . . .

pay attention, Trad; your life depends on it. The enemy's fighting sphere is huge and menacing, with wicked, meter-long spikes flicking out at intervals. Yet in its way, it is also beautiful: the ball captures and fractures the sunlight, flashing fragmented rainbows across the crystal sand.

Inside the fishglobe, tiny one-eyed guppies stare back at me with expressionless brown eyes. I try to think of it as an impersonal, malevolent force, not an intelligent being. I wish she hadn't spoken. I whip the sphere again, more in defiance than in any hope of actually rupturing it. The crowd roars, obviously at something happening in one of the other arena-thirds; this duel is deadly dull up to now. Hopefully I can change that.

The whip is useless. I coil it and hook it back onto my belt. I stand there for a moment, resting, then circle her while I think. She rotates her rollerball to stay with me. That's strange: the rollerball is equally transparent in all directions. It would be easier for her to just shift the orientation of her body-school. Unless she's protecting something?

I grab the whip and, taking two sudden steps forward, I flick it so that the tip wraps around the ball to strike the other side. She rolls back, sprouting spikes, her whole body-school flashing instantly from blue-green to yellow. Suddenly she's on the offensive. The whirling ball closes on me, sprouting and retracting spikes maniacally.

I gasp and retreat, almost dropping the whip. My left leg is bleeding, eroding a narrow crimson rivulet into the sand sweat-stuck to my skin. She must have slipped a spike past the greave, and I didn't even notice. I'm tired, but she shows no sign of lessening her attack. Poor Joella. Poor me.

Vung him, I think. He's not as slow as he looks, in either sense of the word. A quarter-panel to the left and he'd have cracked a glass panel for sure. I suddenly realize that by keeping the vulnerable panels at the rear I had unintentionally revealed which ones they were. Anything goes in the arena, but I do not intend to die *that* easily.

I pull myself together, calming myself. My bodies darken from fear-yellow to determination-brown. The water is foul with spent neurotransmitter; it fogs my thinking and slows my reaction. I must act swiftly. I press an attack, wounding my opponent in the leg. A series of thrusting rolls causes the weakened human to retreat further, nearly drop his whip. Again he attempts to damage the sphere or lasso a spike with the fleximet-al whip, but he cannot strike effectively past the whirling spikes.

I continue to press him, exploiting my faster reactions to the limit, knowing that if I let up on the attack he will have a chance to make a systematic probing of the sphere, finding my weak spots. He is clearly weakening. Finally he breaks and runs, scrambling up a boulder that is as tall as the travel sphere. He is lost to me now. Unless—

I look at the display. I have been using power at a prodigious rate; the flashing orange display on the heartglobe shows the power crystal nearly drained. When it

runs out, I will suffocate. The human lies back on his boulder haven, knowing that he is beyond my reach. I back up, my bodies turning silver-black in a flurry of thought and concentrated calculation. Unless this is done *exactly* right . . .

I roll back, counting revolutions carefully, then surge forward at top acceleration. Just short of my opponent's temporary sanctuary I shoot out a spike. It catches on the ground, and the travel sphere vaults into the air. It is too swift for him to react. The arc is perfect. As the sphere grazes his body, I trigger the other spikes. One spears his unarmored throat; another slices open an arm. Yet somehow he manages to snag a spike with his net and throw the ball off balance.

Momentum carries me onward, but the orientation is all wrong; I am spinning far too fast. The heartglobe flashes red: power is gone. I come crashing down onto a rock, precisely on a vulnerable glass panel.

A demon, a veritable demon. I can't escape from the seemingly beserk school of minnows in her lethal roller-ball. My arm hurts from hefting the snare, my hand is blistered from gripping the sword. I suck in the dense, humid air in ragged gulps, but it is like trying to breathe water. I need to rest. I see a boulder and realize that I just might have a chance, if I can only make it. I break and run, accompanied by the boos/churs/popwhistles and other derogatory sounds of the crowd. I clamber up the huge stone and lie back, temporarily safe.

My skola opponent rolls back to contemplate my position. "I won't die *that* easily, my finny friend," I gasp at her. I pant my way back to more regular breathing, while keeping one eye on her. But what can she do, fly? In a minute I will think up some sort of plan.

I close my eyes for a moment of well-deserved rest, but snap them open again as I hear the crowd roar. A crystal globe hurtles down from the heavens, flashing and sparkling in all the colors of the rainbow: blinding, beautiful, and deadly. I try to move but, slowed by exhaustion, I am only able to shift slightly, fumbling with the useless net-snare at the whirling spikes. I feel a thudding pressure and a horrendous tearing in my throat. I slip into blackness, thinking that at least I'll never live to see Joella die.

The controls are dark; the sphere dead. My lifewater gushes out the smashed panel. I dash my bodies desperately across the tank, sloshing the water in the sphere back and forth. Again, and again. When the water level has leaked down to almost half, the globe begins to rock slightly. Again. At last I manage to get the globe to shift, then finally to roll over until the smashed panel is on top. When the swirling water settles down, the remaining pool on the bottom is just large enough for me to survive. I am battered and weary, nearly comatose from the foul lifewater, but I am still alive.

A human lies dead on a boulder in trisector three, next to an exhausted school of multicolored minnows in a shattered fishbowl. In trisector one a battered, acid-scarred

they hovers in a magnetic field over the body of a tzudefr. In the remaining arena-third a turlap corpse floats in blood-tinted water, with a weary ralomeer swimming beneath it. The crowd has settled back again to await the next event. Idle conversation floats in the wind. They neither know nor care what dreams have died along with the dead duellists.

Over the loudspeakers comes a crisp Omnilang voice: "The results of the first inter-round tricombat are in. The betting pays off as follows. . . ."

Much later, I swim about restlessly in the confines of a travel sphere quite like the one in the arena, save that this one has no spikes, and the power crystal is fully charged. I try to avoid thinking about the arena now, but, here, my thoughts keep returning to it. I have done to another what had been done to me. Trad's memory will forever shadow Joella's life, as Tlaswee's does mine.

The human on the monitor pallet before me lies inert, but the medtech informs me that she is merely sleeping, a natural and even desirable state after neurosurgery.

But she is human. I am skola, and skola do not sleep. Our dreams, and our nightmares, must take place awake.

Given the prize money, it had not been hard to track Joella down. It had taken all of the prize money to arrange the operation. But my human opponent had judged it as worth his life, and I no longer consider myself competent to make value judgments.

I have no frame of reference left to judge whether my decision is that of a hero or a coward. I only know that I have made the only decision I could live with.

My experiments will have to wait for other funding. In the arena I learned that philosophy bows to necessity, that moral imperatives cannot stand against the immediacy of life and death. One who speaks of life can learn all too quickly to produce death.

In the arenas of Mythung anything goes. Along with the life of Joella's pre-mate had gone my moral certainties. Perhaps one day Shaswee bl'Shwel will learn to live with herself in peace again. Saving Joella's life—as I could not save Tlaswee's—seems to have helped.

But not much. ♦



# Afterschool Special

Paul Di Filippo

"My poohs are so *slouchy*!"

The phemes just spilled out like someone had tripped my gates. At first I was shocked. But then I felt good.

Before today, I would've rather gone wiggly with a 'var than admit the truth in front of anyone except Jinx. But somehow—right here and now—everything looked different. I was sick and tired of sticking up for my simplex parental units, especially when they wouldn't let me have what I wanted.

The class was taking a break from invirting with CADaver, the human-anatomy virtuality used to train feldshers. We were all lounging around in

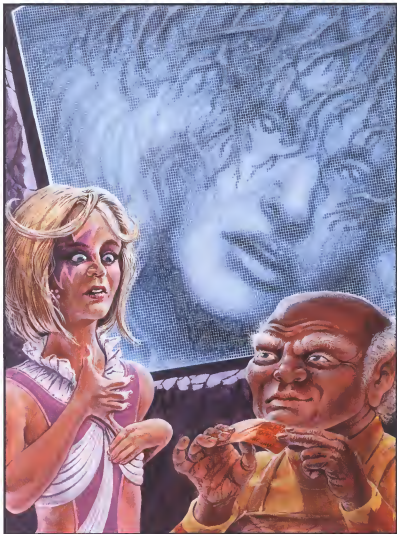


Illustration by Paul Jaquays

the spleen, wearing our secondary identities. The school had a contract with MicroDisney, so we were forced to wear their patented images. Everyone hated it, but the trope-closers claimed it was for our own good. The theory was that no mega-cft spoilboy or churlgirl would be able to run better grafix than someone else, so we could concentrate on studying instead of showing off. Also, some of the ids<sub>2</sub> that kids liked to use outside of school were so cicccone or freddie that you'd spend all your classime creamin' or screamin'.

So I was in my usual Daisy Duck, and Jinx was wearing Goofy and the rest of the class was all cutesy blue-birds and dwarves, mice and fish, Pinocchios and ballerina hippos, all clogging the virtual lymphoid tissue of this "important component of the reticulo-endothelial system" (or so lectured the tutor-turtle, whom everyone was ignoring).

Every once in a while, someone would reach out and snag a passing red blood cell and pop it under their nose. We had found out the rusty smell could really bend your ladders like the best samogon or kompot.

We had been dissing our respective poohs, as kids will, when I had found myself spitting out my comment. I guess I didn't fully realize till then just how much my poohs had been quenching me.

Right on cue my best proxy, Jinx, spoke up.

Now, I mentioned that Jinx was wearing Goofy, but I should add that, having found out how to tweak the bits that constituted his suit, he had retrofitted onto it an enormous set of black-skinned balls and dong. It was kinda sad, seeing as how they were the only ones he would ever have until he became an adult, but I supposed virtual sex organs were better than none.

So Jinx said, "Just how slouch are they, Arnie?"

"They're so slouch," I shot back, "that they make the Bogd Gicgeen look like Siouxi Seccrime!"

Everyone got a laugh out of that, imagining the eternal godboy of Greater Free Mongolia tricked out like our favorite dildonics star.

When the hoots and hollers died down, Honeysuckle spoke up.

I've always hated Honeysuckle. Her poohs let her have these really glamslam Xoma tits two years ago, whereas my chest has yet to even bud naturally, which is the only way with poohs like mine that I'll ever get any boobhs, short of turning thirteen and becoming franchised. More than anything else, this was why I guess I had exploded and called my dumb old poohs slouch.

In keeping with her primary id, Honeysuckle always wore the Little Mermaid. Only she too had twiddled with her image, so that the doe-cycled cartoon transfection sported impossible macro-tits on which the seashell cups had dwindled to nipple-caps.

Now, I watched all the whychromes—including my Jinx—hang on her every word.

"That's because your poohs are *Tee-Ems!*" jeered Honeysuckle.

I winced at the dig. It was not something I could deny. Everyone knew my dads belonged to the Transcentennial Moderationists. They even had their own hour on the

metamedium: "Keep It Simple, Stupid, With Alvin and Calvin Arneson."

In the face of all the laughter Honeysuckle's comment caused, I found myself having to stick up for my dads, and it was awfully difficult, since I didn't really want to and felt like a total hypocrite.

"My poohs may be retro-jethro KISS-asses," I said, "but at least they're not black science boryokudans like yours!"

Everyone got silent as cell-death. My reference to the illegal underworld origin of the wealth of Honeysuckle's surface-respectable poohs was ultra loosh and faroosh. But I couldn't just sit there batting off phagocytes and let her run my dads down. I mean, it was all right for me to do it, but not her!

Honeysuckle's cartoon gaze grew as slitted and mean as that of a Secret Service pantherine confronted with a suspicious character feinting at the World Bank Managing Director. I knew I was truly on her shit list now, and wondered how wise it had been to sass such a nasty girl.

"Well," she said, her voice dripping lysozymes, "the duck can quack! I suppose you think it's all spidersilk and hormone sodas, having poohs like mine. You don't know what it's like, every night half-expecting the crick-cops or the IMF to bust down the door and boot us all!"

It was hard to feel sorry for Honeysuckle as she sat there on a spongy mass of lymph, flicking her flippers and flaunting her chest, so I didn't even try. "You can have anything you want—"

"What does that have to do with being happy? Suppose you could have anything you wanted? Would you always be happy?"

"Why, sure. . . ."

Honeysuckle assumed a venomous smile. "All right, then. What do you want most? C'mon, tell us, and I'll give it to you. I'll see to it that your wildest dreams come true."

Somehow the grounds of this battle had shifted under me. How we had gotten from the respective merits of our parents to who had the happier life eluded me, and I didn't like the change. Somehow, I found myself on the defensive, and was really uneasy.

What could I say, in front of Honeysuckle and all my friends? All I really wanted was a pair of nice unassuming moderate-sized boobhs, and maybe some genitals for Jinx. But I was too embarrassed to say so. So instead, I blurted out the first thing that came to mind.

"I'd like, um—a spike!"

Honeysuckle laughed. "That's all? Out of anything you could have, you choose a crummy, soilin' spike?"

Jinx intervened then, and I sent a silent thanks his way.

"What's the matter with a spike? They're really peppy! Plus they're so new, hardly anybody's got one!"

Honeysuckle huffed. "Oh, I suppose you'd like one too. . . .?"

"I wouldn't mind one. But they cost more than a bucket of brains. And besides, you need your pooh's chop to get one planted. . . ."

Now Honeysuckle adopted that I've-swallowed-every-



trope-ever-made tone she frequently used, which always got under my skin like a stitchbug.

"Well, I think they're simply as tawdry as sparkleskin, and frankly I'd rather wear *chitin*! But if you two *larvae* want spikes, I suppose I'll just have to get them for you."

Before Honeysuckle or Jinx or I could say any more, the tutor-turtle informed us that recess was over, and we had to get back to work.

I couldn't really concentrate on the rest of the lesson. All my bulbs were firing doubletime, trying to imagine what Honeysuckle intended to do for—or to—Jinx and me.

Finally, the tutor-turtle told us to get ready for the phase-change out of virtuality, and the next thing I knew, I was back in my sack, which was already withdrawing its squelchy threads and tendrils.

I tickled it open and emerged into the classroom.

All the other kids were climbing out of their sacks too, their familiar faces and forms a welcome sight after so much microdiz nutrasweet. Most of them—all of them except poor old me, in fact—sport various kiddie-moddies: tails, scales and pointy nails, manes, veins and extra brains. I was the only one whose poohs wouldn't let her have even the simplest little gill-slit or sixth finger—never mind tits—all because they believed in some weird principle of "somatic integrity."

Honeysuckle was brushing her perfect calico hair and eyeing me from her perch on the corner of a smartdesk with the raptorial look of an execucondo's security bird. I wanted Jinx beside me before she could say anything, but he was still struggling to get out of his sack, last one as usual. I went over to help him.

Jinx's sack was undergoing some bizarre kind of peristaltic reaction, and I had to pet its control ganglia till it calmed down. Jinx always had some kind of trouble with his interface bag, because its pirms weren't set up for his peculiarities.

At last though the two of us got it open, and Jinx emerged.

There was nothing to Jinx below his abdomen. His body simply ended a few centimeters below his navel. He looked just like he had been sliced in half by some mad magician.

His bottom—or ventral side or whatever you want to call it—was capped with a tough protective immunologic membrane like sharkskin that was integral with his regular epidermis. This membrane handled all his metabolic wastes, so that Jinx never had to pee or shit.

The way Jinx got around was on his knuckles. His hands and supermyofibril biceps were massive, and his knuckles well calloused. Suspended from these pylons, he could either swing his torso forward, rest on it, then shift both supports, or he could sort of fall forward from left to right hand.

Jinx had been born this way. His poohs were third-generation spacelings whose ancestors hadn't seen much need for deadend legs in zero-gee, and so they had bid the chromosators snip and transcribe until the result was my proxy, Jinx.

His folks, nomenclatura of New Atlantis, had sent Jinx

to Gaia—our school—for what they insisted was a superior educational experience. (Although, what with tropes and the digiverse being equally accessible and high-quality practically anywhere, I failed to see exactly what benefits they were conferring on him, unless it was the dubious Gaian social life or high-status eft expenditure.)

When I first got friendly with Jinx, I asked him two questions.

"How come you don't ride, um, a prosthocart, maybe like the dolphinboys use?"

"Because I'm not a cripple. I'm completely normal, for a spaceling."

I didn't argue the point, even though only baseline scantlings like me rate the word "normal." Maybe the word meant something different on New Atlantis. Instead, I asked the second question.

"I imagine your colony cooks new members in some fancy ductwork."

"Yeah. Repligen wombs with i-Stat endometriums and Ares-Serono placentas."

"But how do you—I mean, what do you do when—"

"How do we get wiggly?"

"Well, yeah!"

"It's all virtual. That's the one thing I don't like about home. I keep wishing I had—had legs and a cock! I even dream I'm walking sometimes. . . ."

"It's probably feedback from Gaia's morphic fields, the human subset. You felt it out in space, but it's even stronger here. Like they say, 'Ain't no shield against the field, cuz it dwells in the cells.'"

"I guess."

Now, as I helped Jinx to a "sitting" position, my reverie was brought to a harsh end by Honeysuckle's sashaying, tit-quaking approach. She stopped a meter or so away and addressed me while ignoring Jinx—except to insult him.

"If you're done helping that knucklebuster, I'd like to finish up our little business matter."

Honeysuckle ran a flicker-screen thumbnail across a seam bisecting her bare midriff, opening up a possum-pouch. From within, she deftly filched a flashcard and handed it to me.

I noticed that Honeysuckle's nailscreen was running the Mandelbrot set, and everything suddenly felt as strange as one of the set's remoter precincts.

With nervous fingers I flexed the still-warm card, and its silicrobe message blinked at me.

#### THE G-GNOME'S CAVE

1040 BUGHOUSE SQUARE

(RIDE THE RED ARTERY TO NODE TEN,  
OR TAKE SLIDEWALK SEVEN)

Somatic and genomic alterations of all types

Deletions, insertions and inversions

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I flexed the card again, and Honeysuckle's totipotent family chop showed up, the semi-infamous Rancifer icon.

Honeysuckle leered. "That'll get you and your friend

anything you ask for from the G-Gnome—including *tits*, if that's what you really want."

I stiffened right up, but managed not to change my expression—I hoped. I knew the whole class was watching and listening.

"No, I want a spike."

"Me too," said Jinx in a comradely way, although I could sense that he was having second thoughts just like me.

"Pardon me, but I'm sure neither one of you knows your efferents from your afferents. But if you both show up tomorrow with spikes, I'll have to admit you've got plenty of testo-estro."

And with that, Honeysuckle turned her back on us as if we had ceased to exist.

The teacher called us to return to our studies then, and so I couldn't talk any more with Jinx.

Needless to say, the rest of the four-hour school day moved slow as a crawly-patch. With Honeysuckle's card in my pocket, I couldn't concentrate on plectics or claudistics or kundalini or even lunch! (And they were serving my favorite that day too: deep-fried free-range croc with null-cal Ben and Jerry's for dessert.) All I wanted was to be finished with classes, so that Jinx and I could decide what, if anything, we were going to do with the magic flashlight.

At last—of course and however—we were free.

Or as free as any twelve-year-old ever is in this ageist society!

Jinx and I met at our usual place, beneath the towering forty-foot paulownia tree on the edge of the schoolyard. We had helped to plant the giant when it was just a tiny seedling two years ago, on Global Arbor Day, and it had been our special spot ever since.

If Jinx had had feet, he probably would have been kicking the dirt. As it was, he exhibited his nervousness by picking bark off our tree.

"I don't know about you," my spaceling proxy said when I came up to him, "but I can't think straight. What do you say we bind some satori, and just sit a minute?"

"Now you're firing! I hear the Chromatin Cafe has that new line of Archer-Daniels-Midland tops on tap. . . ."

"Then what are we waiting for? Let's go!"

So with Jinx swinging himself along as I ambled, we made our way to the Chromatin Cafe.

We were supposed to be reporting to our separate afterschool apprenticeships. Jinx to his naffa boss at the Mercosur Mart (he was training to run an entrepot for New Atlantis) and me to the local branch of the Shel-drake Institute, where I was trying to grok morphic field modulation.

But if we were indeed going to be spiked, then missing our work stints would be the least of our transgressions.

The CC was only half a klick from the school, so we didn't bother with the slidewalks. It felt good to use my muscles after so much virtual nonexercise, and I knew Jinx felt the same.

Soon, we were inside the sodaparlor with its old-fashioned decorations, primitive PET-scan printouts and NMR

images of brain-glucose uptake, flickering on ancient crackly low-res monitors.

"Two Joshu Juices," I said to the popstate kibernetica behind the counter, presenting Honeysuckle's flashcard. If she didn't pay for anything else, at least she'd pay for our drinks.

"Make mine a Potala Punch," countermanded Jinx.

"The order is two Joshu Juices and one Potala Punch," said the kibe.

"No. One of each."

"The order is one Joshu Juice and one Potala Punch."

"Flame on!"

"This is an assent?"

"Does the Pope use tampons?"

The popstate churned its heuristics for ten seconds, then began to brew us our sidechains.

"Want to sit by the pond?" asked Jinx, after the drinks were mixed.

"Sure."

I carried the juices, and we found an empty bench on the grassy marge of the small ornamental pond. Two baseline ducks were paddling in the reeds, and I was reminded of my dumb id, and Honeysuckle's sexy one.

I plopped down on the syalon seat, and Jinx used his strong arms to lever himself up beside me. Sitting together like this, his head nearly on a level with mine, it was easy to forget his lack of legs.

We linked our glasses, and I quoted the ADM jingle.

"Peace of mind—!"

"—for a nudollar ninety-nine!" finished Jinx.

We downed our brews, and waited for the effects.

The tropes had been expertly reverse-engineered from a sampling of meditating monks: in the case of Jinx's drink, from the mind of the Dalai Lama himself. In a minute or so, the world took on a shimmering translucence, and I felt connected to the whole universe. Nothing mattered, but everything counted. All my problems were nonexistent.

Staring out over the perfect pond, I saw the surface ripple in the middle, then break to reveal the finned back of an airfish making the phase-change into the second half of its life.

We had just studied the specs on these splices, and they rushed into my brain in perfect arrays.

Having filled its flotation bladders with hydrogen broken out of the water and revamped its physiology, the airfish was now ready to live in the atmosphere. It would subsist for a few months on airborne microzoa, spore and pollen, all the while sucking low-level ozone from the air and concentrating it in a different bladder. Rising higher and higher, it would eventually burst at around 15,000 meters, the lower edge of the ozone layer, releasing its cargo of reactive molecules where they would do good, not harm.

Highly unslouch. Truly nonfactorable goldstar-plus cytofabrication. I definitely wasn't down with the kids who'd try to shoot the O<sub>3</sub>-suckers with flashlights just to watch the hydrogen mini-explosion.

Jinx spoke up with deep significance. "The 'fish is born, becomes adult, does its work, then dies."

Without satori tropes, Jinx's words probably don't mean much, or else sound ultra-simplex. But I can't tell you what they meant to me then. They seemed to encapsulate our whole situation in a nutshell.

"We're fish too," I answered. "But we're also more than fish."

"You're bright as a three-alarm solar flare, girl!"

I knew then that I loved Jinx, and would always be with him.

At that very moment, as if in confirmation of our love, another couple wandered in to sit on the bench next to us.

The woman wore Systemix meat, a Great Mother somatype. Dressed only in a grass skirt, she had a double line of small breasts running down her torso, and her hips were broad as the lake behind the Yellow River dam.

Her companion's silicrobe trademark told me he was racked out by Cellpro. And what a supersting rater he was! Hawkheaded Horus, noble falcon plumage mantling his shoulders.

Jinx and I looked on in mute admiration for several minutes. In the midst of our trope-induced satori, the couple seemed like heavenly visitors. Even after the glamour had worn off our vision, they still looked megatrump, if merely human.

Ignoring us, the adults quaffed their drinks. (Horus's pointy birdtongue was ultra-uptake!) The brews must have been some kind of aphrodelix, since the couple soon started into some heavy petting. Horus's loincloth quickly became a tent, and I got awfully jealous and sad at the same time.

"Jinx," I pleaded irrationally, "let's use Honeysuckle's card to get the moddies we've always talked about, then run away together!"

Jinx held my hand. "Arnie, think twice. Putting legs on me is no simplex patch job. I'd be laid up for days. We couldn't travel very far in a hired scar-car without leaving a trail even a senile aogie-doggie could follow. Honeysuckle would be pissing prostaglandins at the theft of her card. And then our poohs—or yours anyway—would snatch us back, and the next thing you know, we'd be wearing obedience collars like some splic! No, the only thing to do is to hold out for a year. It's not such a long time. . . ."

Jinx spoke with the voice of reason, and I knew what he advocated was the only sensible course. Still, my whole soul rebelled at the notion of going on with our boring lives without doing *something*, especially when we'd have to face all our cohort tomorrow.

I stood up. "I guess the only thing left to do then is to get spiked. At least it'll show our poohs we've got wills of our own. And it should shut Honeysuckle right up. Are you in a dedicated mode?"

Jinx boosted himself off the bench, thumping onto the grass. "Does a carebear sit in the pedwards?"

I laughed. "G-Gnome, here we come!"

Slidewalk Seven was only a one-block stroll north of us, so we chose that transport over the Arteries.

If you pulled out a length of your intestines and slit it

longwise, you'd expose the velvety microvilli lining, the zillions of little fingers that propel food through your gut. You'd also have a pretty good model of a slidewalk.

The sturdy silicrobe microvilli of the slidewalk propelled anything placed atop them along at a steady five kph. (You could ride the network cross-continent in just a month, if you wanted to spend your vacation that boring way, like many slouch oldsters did.) Each invisible finger was rooted in place, yet flexible enough to pass on its burden to its neighbor. (In constant motion, the slidewalks conveyed a visual impression similar to the waviness of heated sylon pavement. And if you rode them barefoot, they tickled almost subliminally.) Different lanes had different built-in directional orientations, for two-way travel.

The Arngen motto—"Taxis, not taxis"—was spelled out right in the substance of the slidewalks. I remembered having to have my dads explain it to me when I was little, since I never knew that "tax-us" could also be pronounced "tax-ease," or even what they were.

Jinx swung himself deftly onboard with the other passengers, "vars, kibes and citizens, and I had to stutter-skip to stay with him. I wasn't usually so awkward, but I guess I was kind of nervous about our plans, even though I thought I had convinced myself it was the only way.

As if sensing my unease, Jinx tried to make me laugh. "Did you ever download any reductionist paradigm fiction where the author tried to imagine a system like this and came up with miles of rubber belts on rollers?"

Jinx's trick worked, and I laughed like a hyena splice. "That's not true. You're yanking my rods."

Jinx held up one hand. "Parity-plus, Arnie. I'll give you the addresses, and you can see for yourself."

I chuckled some more. Those ancients—where were their heads at?

Before too long, we were dismounting at Bughouse Square.

The thronging Square always reminded me of an old-time carnival midway you might see on some historical channel of the metamedium: lines of garish booths and arcades, peopled by touts and vendors under gaudy silicrobe signage. The centerpiece of the Square, the original Chiron Bughouse, looked positively postmodern, next to the more recent exotic additions to the meatmart.

Here you could find a chromosator or genebender or simple tropedoser who would perform any possible alteration on your somatype or genotype—for a price. If you had the eft, you could be snipped, ripped or zipped; pumped, stumped or trumped; strobed, lobed or probed; primped, skimped or pimped; vented, scented or de-mented.

I stood for a minute or so bathing in the scary, alluring, surreal circus, until Jinx tugged at the hem of my doublet.

"Let's find number ten-forty, before we change our minds."

Tracking round the Square, past the TATA Box and the Primordium, past the Organelle Store and Radio Shack Biocircuits outlet, we soon came to the G-Gnome's Cave.

Its facade was all fractal-modeled grocete stalactites and stalagmites framing an irregular entrance curtained by environmental ribbons.

I looked at Jinx, and he looked at me. Taking his hand, I tried to be as brave as my spaceling.

"Let's get spiked," I said.

And we went through the ribbons.

My dads told me that a decade or two ago there was a rage for somatypes modeled on the characters in some old reed-pair fantasy novel, sparked by a new virtuality rendering of the work. So for a while all you saw were bobbis and snorks and smogs, or creatures with some such names.

I figured the G-Gnome must have modeled himself on a troll or dwarf or some other runt from that book. His big blue eyes, capped by furry brows, were nearly on a level with Jinx's, and the G-Gnome was standing on his bandy legs! Two tufts of snowy fluffaduff sprang from behind his ears and decorated his otherwise bare skull. He wore a leather bib apron over a Windskin suit, and his hands were more massive than Jinx's.

To have maintained the same outdated look all these years made me think he was a conservative, slowmole kind of guy, and I instantly felt better to be putting myself in his brawny hands, so reassuringly similar to my proxy's.

"Children," the G-Gnome rumbled, "how can I help you?"

"We're here—" I began, then stopped.

A third-vid display had come on at our arrival, and now, cycling through a display of the G-Gnome's wetwares, it had reached the boobs.

They were so beautiful. Conical or melony, brown or creamy, drip-nippled or virgin-tipped, they were like taunting mirages in my personal desert.

It was all I could do to turn back to the G-Gnome and beg, "Please, shut that off." With my luck, the next thing shown would be a variety of the cocks Jinx lacked.

The proprietor complied, and I could breathe.

"Thank you. We're here to get spikes."

The G-Gnome's professional smile never wavered, but I could sense something tightening inside him.

"You have your parents'—"

"We've got this," I said, and offered Honeysuckle's card.

Taking it, the G-Gnome flexed it back and forth with a noncommittal expression, but I could see nudollar signs in his eyes.

"Pej Rancifer lent you her card without, ah, duress?"

I tried a haughty sniff like Honeysuckle used. "Of course. We're the best of friends."

"There should be no problem then."

"I hope not," I said, as the G-Gnome's words made my knees go watery.

"Please, be seated."

When Jinx and I were side by side, the G-Gnome activated the display again. But this time it ran through the various models of spike.

By the second rep, we had made up our minds.

"I'll take the Staghorns," said Jinx.

"And I'll take the Coral Cage."

"Very fine choices, both. The placement of each differs slightly. The Staghorns are implanted in the frontal region, whereas the Cage tends more toward the temporals."

The G-Gnome had donned gloves while he was talking, and now squeezed from a tube a line of paste. He approached Jinx and rubbed it into his skull, up front.

Then he did the same to me, more toward the middle of my head.

Carefully peeling off the gloves and dropping them into a D-Grade-All unit, the G-Gnome said, "A mix of topical anesthetic and bonemelt. It takes a few moments to work. I shall debit Pej Rancifer's card while we wait, if you have no objections."

When he was done with that, the G-Gnome went to a cabinet, from which he removed the spikes.

I had never seen the things except on the metamedium, where they were always filtershot real sexy, so I was unprepared for how innocuous they looked in real life: just a pair of square-ish, pointy, drab—well, *spikes*, like the kind you might find in reed-pair railroad ties.

Next from the cabinet came a shiny chrome-handled, rubber-headed mallet.

And with this, the G-Gnome drove the spikes into our heads.

I couldn't feel anything, even when the spike penetrated my dura mater. That G-Gnome was slouch-negative! He had that single tap down perfect. Naturally, I should have known that Honeysuckle and her family would patronize only the best.

Next, the G-Gnome slapped crawlypatches on our arms and began to lecture us.

"These are nutrient supplements. You're going to need them. The spikes will be utilizing some of your body's energy to grow. Even with the patches, you'll want to stoke up with something like Genzyme Carbpot afterwards, to make up for the loss."

Now I could half-feel ghostly invasions of my cranium. Right on cue, the G-Gnome explained, "The spikes are growing osteo-anchors, as well as paraneurons that will interface with yours. That's how they're able to control the color changes that reflect your moods. Once the endogrowth is done, the exogrowth will begin. Let me get a mirror."

The G-Gnome wheeled a digital mirror into place and turned it on, just in time.

The exogrowth was starting.

From the single spike centered in Jinx's head, a pair of antlers began to develop, magnificent self-similar branchings.

From mine a rough coral stalk shot straight up. When it reached a height of about eight centimeters, it began to overspread into a gorgeous latticework umbrella.

Jinx and I watched ourselves and each other admiringly in the mirror, while the G-Gnome smiled benevolently on.

By the time the growth was finished, we were already adjusting to the novel weight of our new accessories. Jinx's antlers almost doubled his height, while my cage had stopped at nose level like a living lace veil.

"How do I look?" asked Jinx, his antlers flaring a crimson I knew from metamedium shows meant excitement.

"Very muskophallic! How about me?"

"Brain coral goddess!"

The G-Gnome clapped his hands together, and we knew he was eager for us to leave.

"I'm glad you're pleased. Remember, removal is a rather more time-consuming and costly process."

"Oh, we'd never want to get rid of them!" I said.

On the way out, Jinx had a little trouble with the door-ribbons catching on his rack, but aside from that, everything went superstring.

Until we got home, of course.

Jinx came in with me, and my poohs just lost it.

I will never forget the sight of them that day. They kind of scared even me, their own daughter, who should be used to them.

My dads are biological brothers who were in the same IMF assault unit during the last brushwar. They were lying in a trench together, under enemy fire, when a shell was lobbed in on them.

The weapon contained some weird parazyme that no one's ever quite figured out yet. What it did was to fuse my dads together everywhere they were touching, as well as introduce a lot of collateral damage and changes, right down to the mitochondrial level.

The bonescrapers patched them up as best they could. Ironically, they had to use a couple of bulgy remora-cords to join them even more symbiotically, since Alvin and Calvin had to share a lot of cytokines to stay alive.

When they were demobbed, their experiences led

them to join the Moderationists, for whom they became instant and effective spokesmen.

I came along as a teratoma.

My dads kept developing these squelchy growths all over their bodies, which the bonies kept removing. One of the growths had more than usual baseline human structure to it, and my dads got the idea that it would be nice to turn it into a daughter. It cost a lot, both in effort and in compromise of their non-interventionist principles. But they were really kind of lonely, and I guess the Moderationists finally relented on the dogma part.

Naturally, I'm glad they did.

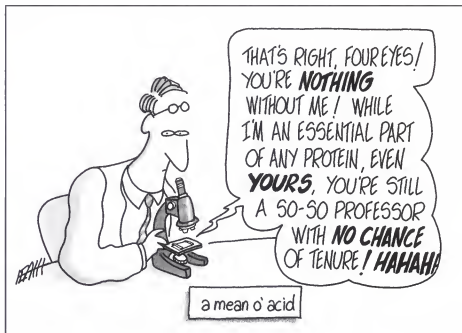
So anyhow, there my Siamese dads stood, linked by flesh and remora-cords straining fit to burst, shouting their heads off at me and Jinx, whose spike growths were turning green with contrition and purple with sorrowful anger at how innocent kids like us always got quenched in the end.

To make a long story short, we had to get rid of the spikes (but not before everyone in our cohort saw us with them), and Honeysuckle's parents had to pay for it, and she had her estrogen shut off for a month, and Jinx, my darling Jinx, got sent back to New Atlantis.

But I really am not worried. Like Jinx said, a year is not such a long time to wait.

And after seeing me with a spike, there wasn't much resistance from the poohs a month later, when I pleaded one last time for tits.

And they're from a much classier vendor's line than *bers!* ♦



# Vapors



## Jack Dann

Fascination is a force which, emanating from the spirit of the fascinator, enters the eyes of the fascinated person as a phantasm and penetrates his heart. Spirit is therefore the instrument of fascination. It emits from the eyes rays resembling itself, bearing with them spiritual quality. Hence rays emanating from eyes that are blood-shot and bleary, on meeting the eyes of the beholder, carry with them the vapor of the spirit and of tainted blood, thus spreading the contagion to the beholder's eyes.

—*De occulta philosophia* by  
Agrippa of Nettesheim

*tant confus  
Me vy que pres de mourir fus,  
car moictié lors par fantasie,  
Moictié dormant en resverie,  
Ou que fust vision ou songe,  
Advis m'estoit et sans mensonge  
Qu'Amours bors du corps mon  
cuer mist.*

So confused was I that I lay  
near death,  
whether imagining or dreaming  
or having  
a vision or daydream, it seemed  
to me  
that, truly, Cupid had removed  
my heart  
from my body.

—*Coeur d'amour épris* by  
René of Anjou

\* \* \*

Illustration by Alan Clark

Sandro Botticelli had fallen hopelessly, obsessively in love with her.

She was Lorenzo the Magnificent's mistress and also reputed to be the lover of Giuliano, Lorenzo's brother. She was a Florentine Venus, the most beloved woman in the city. Women admired her as much as men, for she was gentle and ethereal, a paragon of worldly virtue and classic beauty. Wearing a revealing silk slashed gown of Venetian style that showed off her pale skin and ample bosom, a gold and sapphire necklace, and a matching headband in her luxuriant yellow-blond hair, she was fashion itself. She did not color her eyebrows, which were all but invisible, and that gave her face an expression of constant surprise.

Her name was Simonetta Vespucci, and she was waiting for Leonardo da Vinci.

She sat in his studio and stared closely at a small painting of a madonna on an easel, as if deciphering runes. The late afternoon had become overcast, and the light in the high-ceilinged studio seemed dead . . . gray.

"Ah, sweet Leonardo, you've caught me," she said, pulling away from the painting as Leonardo entered with his young apprentice, Niccolò Machiavelli. "I was memorizing every stroke of your brush. I think you must be a follower of the Pythagoreans."

"And why would you think that?" Leonardo asked, surprised to see her so early—and in his studio. He kissed her hand, which she held out to him. Something was amiss, but Leonardo could not skirt the obligatory title-tattle that introduced serious conversation.

"Well, the madonna and child and cat seem to be composed upon the form of a triangle," Simonetta said, pointing out the imaginary triangle. Does not Plato himself in the *Timaeus* represent the immortal soul as a triangle?"

"I'm sorry to disappoint you, Madonna Simonetta, but I am not a Pythagorean . . . not that I know of." Simonetta laughed and Leonardo went on. "But the triangle seemed to be the proper form for this painting. Perhaps, in this case, the immortal Pythagoras was correct. It could not be otherwise that I painted you to represent the beauty and purity of the Virgin soul."

"And it was in no small measure because Lorenzo had commissioned the piece?"

Leonardo could not help but laugh, for she was goading him in a most endearing manner. "I trust you have not been inconvenienced, but I did not expect to meet you until duskington. But where is Lorenzo? I had thought that he was to accompany you?"

"He is with—" Simonetta caught herself and then said, "Niccolò, would you be so kind as to fetch me some wine? I do have a thirst."

Niccolò, who was standing beside Leonardo, bowed politely and said, "Yes, Madonna." But in a hole-and-corner way he cast a nasty look at Leonardo before leaving the room. Machiavelli could not stand to be left out of anything. He had just turned fourteen and was very precocious.

After he had left, Simonetta opened her arms to Leonardo—like a mother to a child—and he kneeled before

her. She kissed him, and he saw how tired and worried she looked. "What is it, Madonna?" Leonardo asked.

"Lorenzo is with Sandro."

"But why? What has happened?" Leonardo asked, fearing the worst.

"Lorenzo and I had planned a happy afternoon. He awakened me at daybreak to go to Careggi, and on the way we were to pull Sandro out of his bedcovers, so I would have companionship while he discussed Plato with Joannes Argyropoulos and Marsilio Ficino, neither of whom I care to share my time with. But when we arrived at Sandro's, we knew immediately that *everything* was wrong. His studio was in complete disarray. He had draped all the windows so that only the faintest light could get in. We found him in bed. He could not have been eating, for he was skin and bone. And we could *smell* that he was sick." She pressed her face against Leonardo's. He could feel her trembling. Then she pulled away from him and said, "But his eyes . . . they were luminous. When he first saw me, he turned away and said, 'You are too late, I already have you.' He sounded most rational."

"What could that mean?" Leonardo asked.

"I fear he has infected himself with a phantasm . . . of me. I don't need a physician to tell me that he has the love sickness. One could determine that from his eyes alone."

"It is probably *melancholia illa beroica*," Niccolò said, showing off as he entered the room. He looked flushed and seemed excited; he had obviously been listening outside the door. "That is a disease of melancholia that is indeed caused by love. It wastes away body and spirit. Only the eyes are lively, for therein resides the soul's 'internal fire.' Maestro Toscanelli taught me about such things. He is learned in medicine, and magic, too."

Toscanelli had also been Leonardo's teacher.

"Nicco, this is a private matter," Leonardo said sharply.

"But I care for Sandro, too," Niccolò said. "And I can help. I have read the *Lilium medicinale*. Have you?"

"You are being impertinent," Leonardo said, but without anger in his voice.

"Please, let him stay," Simonetta said, moving away from Leonardo, who stood up and poured her a glass of the wine Niccolò had brought.

"I can keep a confidence," Niccolò said earnestly.

Leonardo nodded in affirmation, praying he was correct in doing so.

Simonetta took Niccolò's hand for an instant, then removed herself to the window. "I am at fault. Sandro was in love with me."

"You cannot blame yourself, Madonna," Leonardo said.

"He wrote to me, begging to see me, and God forgive me, I put him off because I could not bear to hurt him." She smiled grimly, as if savoring the irony; and then, as if to defend herself, she said, "But, Leonardo, I could not reciprocate his love. He is my dear friend, but . . ."

"I have not seen him for two weeks. I could have prevented him from getting so lost in his imagination."

"I should have given myself to him," Simonetta said in barely a whisper, as if she were talking to herself. "I

have given myself to others I loved much less." After a pause, she said, "Lorenzo had his physician brought to Sandro's bottega. He is still there, leeching him. But even he suggested that we bring a theurgist to the bedside."

Leonardo simply nodded, although he had little use for the theurgist's magic.

"Lorenzo attended to that, too," Simonetta said.

"Then Sandro is under their care."

"Yes, and Lorenzo sent me to wait for you."

"But surely Sandro would wish to see you above all others," Leonardo said.

"After he told me that I was too late, he became anguished whenever I approached him," Simonetta said.

"In fact, I was kept from his room, for he thrashed about uncontrollably in my presence. He tried to get out of his bed and reach for me. The physician feared he might do me harm. But he kept calling my name, even when I was in another room. It is a nightmare, Leonardo. But I must confess to feeling relieved when Lorenzo asked me to fetch you."

"Of course you would," Leonardo said.

"You must not go back to Sandro's bottega with us," Niccolo said. "It is dangerous."

"How is that?" Leonardo asked. "She would be protected."

"If Sandro has infected himself with his own phantasm of Madonna Simonetta, he will try to draw out her spirit through her eyes."

"It may well be that Simonetta should not return to Sandro's, but that is superstitious nonsense."

"Madonna, did Sandro close his eyes when he asked you that question?" Niccolo asked.

"Why, yes, he did."

"And were they open when he was *virtus estimativa*, when he was not in his senses?"

"Yes," Simonetta said. "He stared as if to devour me."

"And you said that he was frenzied and tried to get out of his bed. Doctor Bernard of Gordon calls that symptom 'ambulatory mania.' And I would also guess Maestro Sandro's pulse to be irregular."

"The physician indicated that, yes," Simonetta said.

"The symptoms of *beroes* are lack of sleep, food, and drink," Niccolo said, unable to conceal his youthful, vain-glorious enthusiasm. "The whole body weakens, except for the eyes. If Maestro Sandro is not treated, he will become maniacal and die. *Il Magnifico* was correct to call for a theurgist. But, Madonna Simonetta, he closed his eyes when he first saw you, in his rational moment, so as not to infect you with his 'internal fire.'"

"Nicco, that is—"

"Please, Maestro, permit me to finish. I know you do not believe that igneous rays project through the eyes, but I am simply applying the training I learned from Master Toscanelli. May I continue?"

Leonardo nodded and sat down beside Simonetta, who took his hand. One had to respect the boy. In a situation of lesser gravity, Leonardo would have been delighted with Nicco's exposition.

"Your image has passed through his eyes and into his heart. It is as real as his thoughts and has become part

of his *pneuma*, his very soul. The image, the phantasm, is a reflection of you; but it is poisoned, and poisonous."

"What can be done to help him?" Simonetta asked.

"If more gentle methods do not work, then whipping and, perhaps, sensual pleasures, such as coitus with several women. If none of that proves helpful, then . . ."

Simonetta turned her head away.

"Well, I am going to see what can be done," Leonardo said, directing himself to Simonetta. "I do believe, though, that Nicco might be correct concerning your safety. You are distraught; why not rest here for a time? Niccolo will look after you."

"But . . ." said Niccolo, obviously disappointed that he might miss the performance of the theurgist . . . and perhaps he was also truly concerned about Sandro, to whom he wished to be considered a friend.

"No, Leonardo, I simply must do what I can to help him," Simonetta said. "I would feel nothing but guilt if I remained here. I am sick with worry over him, now more than ever."

Leonardo looked sternly at Niccolo for upsetting Simonetta. "You will wait here for us, then."

"But I *must* go," Niccolo said, appealing to Simonetta. "At least I know something about this disease; and I, too, care for Maestro Sandro. What have you to lose by permitting me to accompany you?"

"I worry about the dangerous notions you might pick up . . . and what you might see that is untoward," Leonardo said.

Niccolo voiced his impatience and displeasure by making a sound that was something of a growl and a cough, and said, "But how am I to learn if I am not exposed to—"

"Nicco . . . enough! You may come only upon the condition that you do not make a pest of yourself."

"I promise."

Simonetta had been right; the bottega smelled of sickness. Leonardo noticed the cloying, pungent odor as soon as he stepped into the atelier. All the rooms were dark, for the interior shutters had been closed over high and narrow lozenge-shaped windows. Only the door of the *salle* that overlooked a small postern courtyard was opened wide. Thus might some of the poisonous effluence pass out of the house.

Yet it was considered too dangerous to open the rooms to light, lest Sandro's leeching soul be attracted and escape.

As they passed the courtyard, they glimpsed a hag in a torn gamurra; her hair was filthy and most likely lice-ridden. Like an apparition she appeared, then removed herself from sight. They took the staircase to the second floor, which divided into four rooms: two studios, a bedroom, and a toilet chamber. The floors were of polished tiles, although the rooms themselves, each containing a fireplace, were high-ceilinged but small.

Andrea Verrocchio was standing outside the door, as if to take the air. He greeted Leonardo, who had been apprenticed to him for fifteen years, with a nod and a tight smile, and he bowed to Simonetta. "Should you be



coming into this room, Madonna?" he asked, fearful for her.

"I shall be careful, Andrea," she said. "If there's the slightest commotion, I'll leave. I promise. . . ."

Although Andrea seemed to be at odds with himself, he acquiesced. He led them into the darkened bedroom, which also served as a kitchen; the tarry smell of herbs and medicine was overwhelming. It was hot as an oven, and close. A roaring fire cast an eerie light and shivering shadows upon Lorenzo, his brother Giuliano, and their small retinue that stood near Sandro's bed. Even in this flickering light, Lorenzo's face looked coarse, overpowered by his large, flattened nose; he was suffering one of his periodic outbreaks of eczema. His brother, on the other hand, was extremely handsome, with a slightly girlish face and brown curly hair.

Sandro lay naked; his head was propped upon a bolster. He stared fixedly at the ceiling while two whores tried to excite him—to no avail. Every few seconds he trembled, as if to a blood-rhythm of his own.

Leonardo took a sharp breath upon seeing his friend, for Sandro looked to be in a death-coma: his face was slick with oil and the perspiration of heat and fever; his eyes were glazed and looked sunken, for he had lost too much weight; and his breathing was thready. He was bleeding from recent wounds and bloodlettings: large welts stood in relief against his pale flesh like arteries on old, pallid skin.

Horrified, unable to help himself, Leonardo pushed away the whores and covered his friend's nakedness. "Sandro, it's me, Leonardo." But Sandro didn't seem to hear him. He was murmuring something, and Leonardo leaned close to his friend to hear him whispering over and over, "Simonetta . . . Simonettaettaetta . . . Simonetta . . ."

Leonardo put his palm upon Sandro's forehead, which was hot to the touch, and said, "Do not worry, my friend; the Madonna is here, as I am."

Lorenzo de Medici gently pulled Leonardo away from his friend. He embraced Leonardo and shook his head, despairing over Sandro.

"It's no use," said one of the whores. "He's in no way to be fukish. There's no blood in that soft worm of his." She had a large frame and pendulous, rouged breasts; her hair seemed as dirty as that of the hag Leonardo had glimpsed on the courtyard; but she did have a certain, albeit coarse, beauty. "If you think it right, we could whip him again, *Conte*," she said, directing herself to a youth hardly older than Niccolo, who stood beside Lorenzo and Giuliano de Medici near the cloth-covered step that led to the high bed.

This was Count Pico Della Mirandola, the darling of Lorenzo's court, the young genius who had unlocked the secrets of the Jews' Cabbala and had written the brilliant *Platonick Discourse upon Love* as a commentary on the poem by his friend Girolamo di Paolo Benivieni. He was certainly a comely boy, actually extraordinary-looking. He had very pale skin; penetrating gray eyes; white, even teeth; a large, muscular frame; and elaborately coiffed, reddish-blond hair. He wore the traditional garb

of the theurgist: a crown of laurel and an immaculately clean, white, wool gown. He was sweating profusely from the heat; the other men, including Verrocchio and Lorenzo, were dressed in shirt sleeves, in *zuppone*, while the servants were bare-chested.

"Leave him; you've done your best," Mirandola said; and the whores left the bed, as did her companion, who was flat-chested and could have been easily mistaken for a boy.

Then to Lorenzo she said, "*Il Magnifico*, do you wish us to remain to . . . help any of your other citizens?" She cast a glance at Niccolo and then at Mirandola. Her skin was slick and shiny in the firelight. "Your magician certainly looks to be in need of some firkytoodle, is that not true, *mio Illustrissimo Signore*?"

Mirandola coolly ignored her, although color came to his cheeks.

"Thank you, no . . . on all counts," Lorenzo said, smiling; and he placed a florin in each woman's hand.

The whores were delighted.

After they left, Simonetta came forward; but she was cautious. She took Leonardo's and Lorenzo's hands and asked, almost pleading, "What can we do? This is so . . . degrading." She was in tears and could not take her eyes from Sandro, who must have heard her or sensed her presence, for he suddenly snapped into alertness.

He sat up in the bed, looking frightened, as if he had just awakened from a nightmare. Before he could be restrained, he jumped to the floor.

Repeating her name over and over, he lunged for Simonetta.

Giuliano brought Sandro down; but, like the others, he had been caught off guard. Leonardo, Lorenzo, and Verrocchio held him, although it was difficult, for he was thrashing and kicking; then, as if this had been some erotic seizure, Sandro seemed to fall back into his coma of shallow breathing and periodic tremors.

As the men lifted him with difficulty back to his bed, Mirandola took Simonetta by the elbow and led her firmly to the door. "Madonna Simonetta, did I not tell you to keep *out* of this room? It is absolutely too dangerous for you to be in here . . . dangerous for you *and* Messer Botticelli."

"Don't be angry with me, Pico. What harm can I do now? I only wish to help. It seems that he is wasting away . . . that he is inhabited by demons, please God protect him. I fear he is going to die."

"Perhaps not. I am going to try another exorcism, Madonna. If that fails, I will come to you."

"Yes?"

"And then you will have to make a decision that might well endanger your life."

Simonetta nodded; but to look at her, it seemed as if she had been relieved of a great burden.

Then she slipped out of the fire-stoked room.

When one of the servants asked Lorenzo if the fire could now be put out, lest someone faint, Mirandola answered for *il Magnifico*. "The fire must be stoked *up*, but first fetch the hag to us immediately."

"Of what use is the fire?" Leonardo asked, after Lorenzo introduced him and his protégé Niccolo to Mirandola.

"Perhaps we should damp it out," Lorenzo said, wiping the perspiration from his face with a cloth. "This discomforting heat has not seemed to help Sandro one whit."

"I beg a bit more of your patience, *Magnifico*," Mirandola said. "The fire is not for Maestro Sandro, but for us. *Vinculum quippe vinculum amor est*. And the strongest chain of all is that of Venus, of love. *Daemon magnus*. The heat is to protect us from the dangerous influence of Sandro's phantasm of Eros, lest it attach itself to our souls and become our phantasms."

"And why would heat give us this protection?" Leonardo asked, curious about this superstition.

"Are you not familiar with Aristotle's differentiation of cold melancholic vapors and pure, or hot, spirits?"

"I must confess I am not," Leonardo said.

"Well, suffice it to say that heat prevents the infection of dreams and phantasms from 'cold' and hence impure melancholy. Such impurity the learned Origen called 'the seat of elfish spirits and the devil.'"

Leonardo thought better than to continue questioning Mirandola, lest he humiliate this insolent and pompous young aristocrat, especially in the presence of Lorenzo.

"If the shrew cannot break these bonds," Mirandola said to Lorenzo and Giuliano, who came over from Sandro's bedside, "then only Simonetta can help him."

"How is that?" asked Lorenzo.

"Sandro's diseased spirit might be cleansed if it could reestablish contact with the object of its obsession: Simonetta. But to do that Simonetta would have to absorb the phantasm that is poisoning Sandro." After a pause, he said, "We can only hope that his soul is not already dead inside him. If that is the case, then he lives only through the object of his obsession."

"If that is so, then he is lost to us."

"And what of Simonetta?" Leonardo asked, believing this to be superstition, but dangerous nevertheless.

"She would, in effect, be taking herself—her own phantasm—back. But this spirit that was generated in Sandro's soul out of melancholy anguish is tainted. It is not a true reflection of Simonetta. . . ."

"It would be as if she had imbibed poison."

"Then that cannot be permitted," Lorenzo said. "Absolutely not."

"But," Mirandola said, "there is a very strong chance that she can then be cured, exorcised, if such cure is undertaken immediately. It is very risky; but there is, so to speak, an antidote."

"You should also realize," he continued, "that if our Sandro's soul has already languished, he will die—as surely as if a knife pierced his heart—when she accepts the phantasm he has created."

At that moment, the hag entered the room; and Leonardo almost gagged at the smell of her. But her odor was not merely that of filth, but of decay, such as rotting meat. She now wore a black *mantello* of cheap material draped over her head and shoulders. She bowed her head to Lorenzo and Mirandola and said, "I make you no promises, Lords."

But Mirandola, ignoring her, walked over to the bedside. He fixed his eyes upon Sandro's—or upon the phantasm reflected in his eyes—and said: "O, supreme master of hallowed name, O, Master Saturn, you who are frigid and sterile, bleak and baleful of countenance, thou who art sincere, whose word is absolute truth; thou who art wise and impenetrable, who knows not pleasure or joy, who knows every ruse and art the divine deceiver, who carries prosperity or ruin, and who brings men pleasure or misery! O Magnificent Father, please be it that through thine goodness and benevolence, you permit your servants to cure this man's weakened, contaminated soul of its phantasmic sickness."

Sandro closed his eyes tightly and shivered. Then he shook his head from side to side, as if he were about to have an episode.

"Bind his hands and legs to the bed," ordered the hag. "And be soon, before he slips back to his swoon!"

Leonardo protested, but Mirandola nodded at the servants, who did as the old woman asked. As Sandro was being tied, Lorenzo said, "Leonardo, this is difficult for all of us; but we have no other choice, unless we wish to let our friend die."

Leonardo held his tongue, for it would be impossible to convince Lorenzo, or anyone else present, for that matter, of the inefficacy of sorcery; and it would be especially dangerous to oppose young Count Mirandola, *Il Magnifico's* favorite.

When this humiliation was over, Leonardo would attend to Sandro.

But the hag lost no time. She threw small bags tied with twine into the fire. Their contents crackled as they burned, discharging vapors that smelled of sweet grass, perfumes, formaldehyde, and resin. They burned the eyes and caused various shapes and colors to form in the consuming flames.

Leonardo felt woozy and dizzy, as if he had had too much to drink. Afterimages seemed to be exploding along the edges of his vision. He was certain the hag's vapors were meant to addle all who inhaled them, so he stepped back from the fire and covered his mouth with his sleeve until the vapors dissipated. He ordered Niccolo to do the same.

The hag walked around Sandro's bed and began swearing at him in her raspy voice. She humiliated him, calling him a Jew and a work-back sodomite; she maligned Simonetta, the object of his desires, as a putain and a whore-bitch. She leaned over him, pulling back her *mantello*, so her dugs hung over him in a grotesquerie of sensuality. Then she became louder, shouting as she shook him by the shoulders. "Your woman is a scrub, a skrut, a fuckstress." She crawled upon the bed—straddling Sandro's head with her spindled, slap-sided legs—and said, "Look up my snatch, shite-poke." And in a girlishly sweet voice, she asked, "Is your woman's love-flesh as pretty as mine?" She pulled back her clothes, exposing her genitals, and pulled away a rag soaked in menstrual blood—certainly not her own—that was tied around her waist.

"Take down the curtains from the windows," she shouted at Mirandola.

"That is to help free Maestro Sandro's phantasm," Niccolò said.

Leonardo shook his head in disgust and said, "I don't think you need see any more of this." But Niccolò behaved as if nothing had been said and edged away to the other side of the room; Leonardo didn't press after him.

Squeezing Leonardo's arm, Lorenzo said, "If there were another alternative, I would have surely held to it. I, too, find this revolting, just as I do her mention of Madonna Simonetta's name. If such foul words were uttered by *anyone* in any other circumstances, I would put my sword through the drudge's neck!"

Leonardo could do nothing but nod.

Mirandola pulled down the makeshift curtains; and each time he did so, he invoked "*Deus lux summa luminum*," "the invisible light of God." Faint light of the dying afternoon suffused the room, as transparent and diaphanous as the light of Sandro's paintings, one of which Leonardo now noticed standing against the wall. It was the *Primavera*; and the dancing group of graces, depicted as described in a passage in Apuleius, seemed to be created out of light. But these figures did not seem to have any physical existence. They were luminous spirits. Angelic, ineffable visions.

Phantasms of Simonetta wrested from Sandro's mind.

And, indeed, all the faces and figures in this painting were Simonetta's.

Perhaps it was the vapors from the fire that witch-struck his vision, but Leonardo imagined that the graces were all in subtle movement; they were alive and tortured, caught in that timeless, two-dimensional space of the painting.

Waving the blood-stinking rag above Sandro's face, the hag made sexual noises and sat upon his chest. She brushed the rag against his face, held it under his nose, and uttered the *malleus maleficarum*: "Your swinish woman, your slut, she is like this . . . like this. A bane of nature she is."

Then she crawled backwards on her knees and manipulated Sandro's penis inside herself.

Sandro eyes were open, and they seemed focused upon her.

Indeed, only his eyes seemed alive. . . .

After gyrating upon him in a grotesque parody of coitus, the shrew finally gave up.

Still crouching over him like a four-legged spider, she turned to Mirandola and Lorenzo and said, "This is not a man, but a devil. Nothing can help him!" Dismounting Sandro, she climbed down from the bed. She pulled her gamurra around her and walked stiffly out of the room with the mien of a woman of a high birth who had just been insulted.

To Leonardo's horror and disgust, Sandro—who was still trembling and mumbling Simonetta's name—had an erection.

When Mirandola returned to the room with Simonetta, Lorenzo became anxious and agitated; only now was it obvious how much he cared for her. Leonardo and Giuliano stood quietly beside him.

"Do you wish to clear the room?" Mirandola asked Lorenzo.

"Would it have a disruptive effect upon Sandro's . . . cure?"

"I would think not, but it could be dangerous for others."

"Then anyone who wishes to leave should do so now," Lorenzo said so that all could hear. The physician, looking tired and unkempt, bowed to Lorenzo as he left the room with his urceus of leeches. He seemed relieved to be finally leaving.

Verrocchio gave Lorenzo a bear hug and said, "As much as I love Sandro, I think it best if I give Madonna and you, *Magnifico*, your privacy. If I am needed, I will be but a call away."

"You'd best take Nicco along," Leonardo said.

Verrocchio nodded, smiled grimly, and called Niccolò. "Come along," he said, pushing Niccolò and a young servant before him.

"Are you certain you wish to take this risk?" Lorenzo asked Simonetta; there was an edge of desperation in his voice.

Simonetta nodded and kissed him on the cheek.

But Lorenzo embraced her and said, "There *must* be other alternatives."

He looked to Mirandola, who said, "I'm sorry, *Magnifico*, but we have exhausted all of the established remedies."

"Then we must study the matter further," Lorenzo said. Looking at Simonetta, his hands resting upon her shoulders, he said, "I cannot permit you to do this, Madonna. I care for you too much." As Lorenzo pulled her to him, Leonardo and Giuliano politely backed away.

"And what of poor Sandro?" Simonetta asked. "He might die without our help. Do you not care for him?"

"Of course I do, he is like my own brother. But I cannot lose you, my darling."

"*Magnificence*, if I do not help him, he will surely die. I could not live with that. I love you, but I must do this thing."

Lorenzo hung his great, ugly head.

"Now is my chance to test my faith," Simonetta said.

Lorenzo nodded and managed a smile.

Then to Lorenzo, Leonardo, and Giuliano she said, "Now you must all leave. I am mindful of your safety, for I love you all."

"I shall remain," Lorenzo said.

"And I shall keep you company," Leonardo said.

"And I, too," said Giuliano.

"Giuliano . . ." Lorenzo said, but then he caught himself. He gave his brother a great hug, and then espied Niccolò, who had slipped back into the room and was standing in shadow behind the door. "But you, precocious young man, must leave," he said to Niccolò in a loud voice. "Or would you disobey me, too?"

Niccolò stepped into the light, bowed, and apologized to Lorenzo and Leonardo. His ears were burning red. But he had enough composure to say to Simonetta, "I wish you God's mercy on your endeavor, dear lady."

She smiled at him and nodded.

Young as he was, the irony was certainly not lost on Niccolò that his master Leonardo, who had no belief in intersubjective magic, could remain, while he, Niccolò—a student of divine wisdom—had to remove himself.

It was to his credit that he did not argue or complain.

After he left, Mirandola said to Simonetta, "There is not much time, lest Sandro become agitated. You must draw his phantasm into yourself, but do not let it infest you. When it passes into you, you must confine it behind your eyes, lest it reach your heart and circulate. As I explained to you, dear lady, you must visualize a vast and bright space—such as a cathedral flooded with sunlight—behind your eyes."

"Yes, Pico, I remember."

"Then go to him."

"Be careful," Lorenzo whispered, and then he uttered a prayer.

As Simonetta walked directly to his bed, Mirandola went to the hearth and placed another log on the fire. The wood crackled and steamed, for it was not yet completely seasoned. Then he dropped a small bag into the flames, and a pungent, sulfurous vapor filled the room as if it were light itself. Once again Leonardo felt dizzy . . . and expansive. Although it was impossible to avoid the smoky effluvium, he pressed his sleeve against his face. Just now Leonardo could imagine that bodies and space and physical existence could be ignored, that everything was indeed spirit: image detached from matter.

Such was Sandro's belief. . . .

Simonetta stood beside the bed and took Sandro's hand, which was still roped to a headpost. "Sandro," she whispered. "It is Simonetta. I have come to you to take your pain. To free you . . ."

"Simonetta . . . Simonettaetta," Sandro mumbled in a singsong.

An instant later his brow furrowed and his face seemed to come alive. But he closed his eyes so tightly that his lips were drawn upward by the strain, as if Simonetta were the sun itself, too bright to be looked at directly.

Sandro strained at the ropes and shook his head. Then, as if suddenly lucid, he said, "Go away, please leave me! I do not wish you harm. My lovely Simonetta, Simonetta . . ."

"I will not leave," Simonetta said, taking his face firmly in her hands. "Look upon me, I am here."

But Sandro refused to open his eyes.

He thrashed about in the bed.

It was as if Simonetta's softest touch was a brand searing his flesh. But she would not be thrown from the bed. She held on to Sandro until he stopped bucking and flailing himself about.

And suddenly she caught him.

He must have opened his eyes for an instant.

He saw her and turned his head away, pressing the side of his head against the bed, as if hoping to bury himself inside it; but then—shaking with strain, fighting the muscles that would obey his spirit, but not his mind—he turned to her.

Looking upon her, wide-eyed, transfixed, he suddenly became quiescent.

It was dusk. The fire was low, and piles of embers glowed redly in the hearth. Candles flickered in wall sconces, casting pale, wavering shadows; and lamps burned on table and bench. Although the fumes from the potions thrown upon the fire had disappeared into the suffocating air, Leonardo saw—or, rather, glimpsed—something vaporous pass between Sandro and Simonetta.

It passed from his beclouded eyes to hers, which were clear and lustrous.

This vapor was sanguineous, pure, and hot: it was a flicker, a swiftly passing glory as pale and subtle as the aura that surrounds the moon on a misty, stormy night.

Gazing one upon the other, locked in an embrace that was not physical, they kissed. Their eyes remained open, watching each other as if in wonderment, as tongue prodded tongue.

They acted as if there was no one else present.

Lorenzo shifted his weight nervously from one foot to the other.

"I pray this is not their *binsica*," Mirandola said, meaning the ecstatic kiss of death; and he intoned, "*Multiplex semen, multiplex Venus, multiplex amor, multiplex vinculum*," as if a description of principles would bind them to life.

"Untie him," Simonetta said as she pulled the vair-lined bedding away from his erect penis.

As Mirandola walked toward the bed to comply with her wish, Lorenzo started after him. Then he stopped, shook his head, and sighed. Leonardo squeezed his arm, and Lorenzo nodded in appreciation. "She will not be harmed, Leonardo," Lorenzo said, as if trying to convince himself.

But Leonardo understood that the First Citizen was also feeling the shock of jealousy.

Mirandola untied Sandro; and Simonetta, as if dream-born, climbed onto his bed. Sandro embraced her; and then with an abrupt movement, he pulled her down upon the mattress. He rolled on top of her, kissing her, while he urgently raised her undergarments. She screamed as he entered her; and they coupled savagely, each staring into the other's eyes.

Consumed by their souls' internal fires, they became one flesh.

"I cannot stand to watch this," Lorenzo cried; and he turned away. Everyone else in the room followed suit. But then, as if a certain fascination of the abominable had taken hold of him, he turned back. Giuliano took his arm, and Leonardo grasped his hand tightly. Lorenzo recoiled, but Giuliano and Leonardo held on to him until he regained his composure.

But even as Lorenzo watched, the *vinculum vinculum*, the chain of chains, was broken.

Sandro lifted himself away from Simonetta, who lay upon the bed. She seemed lifeless, drained of blood and color, her eyes open and staring upward. But she was breathing slowly, as if she were asleep or in a trance. Sandro rubbed his eyes and, uncomprehending, stared directly at Leonardo. "What has happened?" he asked in a whisper, and then he turned to Simonetta. As he looked

at her, he began to cry. He touched her face and said, "Jesù, what have I done?" It was as if he had just awakened from a dream only to discover it was real.

Then, before Sandro screamed and tore his hair, Leonardo calmed Sandro, Lorenzo tried to rouse Simonetta.

"Magnifico, wait," Mirandola said to Lorenzo, as he gently pulled him away from Simonetta. "You must allow me to awaken her. There is little time, and her soul is full of the poison of Sandro's phantasm. Look, you can see it filling her eyes." Lorenzo nodded and stood back. Then Mirandola turned his attention momentarily to Botticelli and said, "Truly, this woman cares for you, Sandro. She has healed you. Now, with God's help, you will begin to gain back your strength."

But Sandro—who was perspiring heavily, as if, indeed, all the poisons were pouring out of him—fell back into Leonardo's arms in a dead faint.

"Leave him," Mirandola said. "There is little time. The Madonna must be moved away from Sandro."

As Leonardo and Giuliano removed her to an ornately carved bench situated near the far corner of the room, Mirandola hurried everyone out of the room. Then to Leonardo and Giuliano he said, "If you must remain, then stay near Sandro. Even while he is in a swoon, you must block his view of the Madonna. Cover his eyes, if you must. It is not impossible that this phantasm could reestablish itself in Sandro's heart. Then both he and the Madonna would weaken and die. Now, please, *Magnifico*, leave us."

Leonardo and Lorenzo watched Mirandola from the bedside, where they sat in positions so to obstruct Sandro's view of Simonetta, should he awaken. Mirandola held onto Simonetta, lest she fall forward from her seat. The room was dark, although dusty moonlight passed through the window and the candles guttered, casting yellowish, flickering light. A lamp cast its own wan aura from its place on the end of the bench opposite where Simonetta sat.

Mirandola pulled the lamp toward him and reached inside his robes for a small mirror, which he placed on the bench within easy reach. Then he took out a leather pouch, from which he removed balsam, a square of sugar, a gold amulet, myrobalan, a thin vial of sweet perfume, and a scattering of precious stones. He placed these things beside the mirror and said, "May these gifts of the animate world become the recipients of the poisonous *pneuma*. May they become divine enticements and, through their affinities to the higher world, gain you the support of angels ethereal."

He held the vial near Simonetta's nostrils. Her head jerked backward as if she had just smelled ammonia water; but before he covered the vial, he inhaled its contents, closing his eyes for a beat, as if he were transported. Then, putting down the vial, he clapped his hands loudly before Simonetta's face. "Awaken," he said, holding the mirror before her.

Her eyes were dilated.

She took the mirror from him and smiled as he

stared into it. "It's lovely," she whispered, looking at her eyes as reflected in the mirror.

She seemed to be in a state of bliss.

"What do you see?" asked Mirandola anxiously.

"Sandro's *pneuma* . . . his creation. It flatters me, for his phantasm is an angel. How could I live up to such a perfect image?"

"Madonna, do not let the image bewitch you," Mirandola said. You must expel it. Do you understand?"

"I can look directly into the higher world. . . ."

"Madonna. Madonnal! Can you hear me?"

She nodded.

"If you wish to imbue yourself with the qualities of the higher world, then you must allow these things I have placed before you to become your affinities. Let them be the recipients of the phantasm you have taken from Sandro . . . and you will be safe. But to do that, you must let Sandro's phantasm pass into the mirror."

"I see it there," Simonetta said.

"Very good. Now close your eyes and look into yourself, into the bright space behind your eyes. That's where you trapped the phantasm, is it not?"

Simonetta nodded.

He pressed the jewels, amulet, and sugar into Simonetta's hand, which rested on her lap. "Now tell me, *signora* Vespucci, does some of the image still remain in the cathedral you created in your thoughts?"

Again she nodded.

"Then you must force it into the mirror. Let the objects in your hand give you the strength of the higher presences. Open your eyes now. Give the phantasm to the mirror."

"It is dark. The mirror is dark."

"Has the phantasm left you?"

Simonetta nodded.

Mirandola took the mirror from her and threw it to the ground, then crushed it underfoot. He made her open her hand and drop the jewels and amulet; he wiped the sugar from her palm. "It is done," he announced. "The servants must take the jewels, shards of glass, and other affinities, which are now poisonous, and bury them. And the physician must let the blood of both Maestro Botticelli and Madonna Vespucci with his leeches. I give you back your friends," he said to Lorenzo. He smiled warmly at his benefactor.

As he spoke, Simonetta looked directly at Leonardo.

And she, too, smiled.

But it was a smile of dissimulation.

Suddenly Sandro awakened. He gasped for breath, as if he were a drowning man breaking the surface of the sea. Looking directly at Simonetta, he asked, "Leonardo, where is she? Where is Simonetta . . . ?"

"Be quiet and rest now," Leonardo said as he wiped the perspiration from Sandro's face with a corner of the bedcloth. "All is well."

"And Simonetta, what of Simonetta?"

"Like you, Sandro, she will soon be in high feather," Leonardo said, even as a chill worried its way up his spine. ♦

# Tipi Ganoo and Tyler II



Andrew Scott Archer

I was busy shoving papers from one side of my desk to the other, when an elf popped in. He didn't open the door. I saw the flash, smelled the ozone, and—*pop!*—there he was. I gave him an elven greeting.

Yeah, I know what you're thinking. There's no such thing as elves on Earth. And you're right. But, in the Universal Network, there *are* elves. All kinds of them, in an assortment of shapes and sizes. Mostly small.

So he wasn't from Earth. Probably not even from the Ter frequency. And, somehow, I sensed that he hadn't come here to hire me.

"Up against the wall, father-mocker," he said. "And save the snappy patter. I'm not an elf. I'm a Ganoo."

Well, I wasn't going to fall

Illustration by Tom C. Lunzer

for that one. If he thought I was going to ask, "What's a Ganoo?" he had another gathink coming.

Besides, he was waving something at me in a threatening manner. Ordinarily, that sort of thing meant big trouble. But what he was waving was a large orange tabby that looked even more annoyed than he did.

"Um . . . what's that you're holding?" I asked.

"Don't play dumb with me, shaman. It's a cat, and it's pointed in your direction. Now get moving, or I'll fill you full of lard." He shook the cat with emphatic menace.

I decided to play along. Anything was better than paperwork.

As I walked backwards toward the wall closest to my desk, I studied his dark, olive-skinned face. For a Ganoo—whatever that was—he looked fairly unremarkable. Except for his taste in clothing. He wore a looney potpourri of plaids and checks and polka dots and paisley, grounded in long, pointy shoes, and punctuated by a neon-green string tie. If they sold insurance on personal fashion, his policy would have been high-risk.

Anyway, I was sure I'd never seen him before. I wondered what I'd done to foul my luck.

"Don't know who you're looking for, but it's not me," I said. "I don't know you, and I'm sure I've never made fun of your dad. And what's that about shaman and lard?"

The little chest heaved a big sigh. "I've got it wrong, haven't I? I *knew* I shouldn't have rented those previously viewed vids. The picture was lousy and the sound was all fuzzy. And I do have a slight problem with your language. But I thought I had the speech pattern down, Pat."

Something about the way he said that—about the way he said almost everything—gave me a clue.

"You're trying to talk like a gangster, right?"

He looked as if he'd been caught sitting on a wet whoopee cushion. He stomped around and threw his oversized purple hat to the floor.

"The cat isn't scary enough, is it? I knew I should have found a bigger cat."

The puss took that opportunity to hack him a good one on the arm. Then it jumped down and ran out the door.

"No, it's plenty scary," I said. "But I think you meant to use a gat."

"I wondered where it kept the lard," he said. "And why anyone would be afraid of lard. Unless of course it was really bad-tasting lard."

"You wanted to threaten to fill me full of lead . . . with a gat," I offered. "And I'm not a shaman . . . I'm a . . . er . . . shamus. A detective."

"Oh, dear," he said. "I wasn't even close."

"Why'd you want me to think you were a tough guy?"

He looked around for the cat, saw that it was gone, then looked worried. "I wanted to impress you. No one takes a Ganoo seriously. In the vids I saw, gangsters were treated with respect."

He paused, and threw his oversized wide-brim to the floor. "Well, it looks like my jug is up. I'm really sorry to have bothered you."

With that, he headed toward the door. "I guess I'd better find the gat and scam."

"Wait a minute. Want to tell me why you're here?"

He stood there for a minute, deciding. "I've pulled a lot of springs to get your help," he said. "And you're being very kind, considering the way I talked to you. But I don't think anyone can help me now. I'm in sheep *dip*."

"No, you mean . . ." Nah, I decided to pass. So what if the gift of gab wasn't his strong suit? Money is money. "What's the problem?"

He took the seat across the desk from mine. It could have accommodated three of his kind, but he managed to look comfortable in it. He reached into his pocket, retrieved a pipe, lit it, and began.

"As you've probably guessed, I'm not from your channel. Not even from your frequency."

"No, we don't get a lot of elves on Ter," I admitted.

"Ganoos!" he said, regaining some of his self-esteem. "We're kind of similar to elves. Except for these."

He tipped his head forward, revealing a stumpy pair of horns, one behind each ear.

"Your clothes are different, too," I remarked. "Very . . . ah . . . distinctive."

"Thank you. We're a lot more colorful than elves. Actually, we've got it all over elves. For example, elves don't have the MYSTIC POWERS OF THE GANOOS."

He hadn't really raised his voice, but that phrase seemed to bellow forth from a high-powered echo chamber. I shook my head a few times and waited for the noise to subside.

"The mystic powers of the Ganoos!"

He looked smug for a minute, then forced it back down. "They're our secret weapon." He shifted his position in the chair, and the subject.

"We're full of surprises. We just don't get the off-channel press that elves do. We're a modest race, and we keep a low prophylactic. Say, you *have* had experience with the Little People before, haven't you?"

I admitted it. I wasn't big on Little People, but I'd met my share. Rowzbif, one of my fellow Assistant Directors, says that when I've traveled the various frequencies of the Network as long as he has, I'll have met at least one of just about everything.

"Okay," he continued. "Then you know that the Little People are more . . . sensitive . . . about some things . . . than other creatures."

I considered it. I'd once been badly beaten in a dwarf bar after asking for a short drink. Another time, in another bar, an elf seemed to be having trouble coming up with the price of a drink. I'd reached into my wallet, and asked if he was a little short. The elf went berserk. He grabbed my beer, threw it in my face, and stomped my toes purple. Soon after that, I'd stopped frequenting specialty bars.

"You don't like to be called short," I said.

"We're not *short*!" said the Ganoo. "Unlike you ceiling-dusters, we're vertically challenged. Gravity-enriched. Ground-advanced!"

At this point, he leaped up from the chair, put one hand on his chest, and started to sing:

*"We're not afraid of tripping 'cause we don't have far to fall,*

*"We've got the biggest hearts around, and yet you say we're small,*

*"We're fast, we're lean, we're tough and mean, we've got a lot of guts,*

*"And if you ever call us short, we'll punch you in the—"*

"Nuts to the song and dance, pal. I think I get the idea. No offense intended," I said.

"None taken," said the Ganoo, as he got back in the chair and sat up to his full height. He was still barely even with the top of my desk.

He let out a nervous belch, and said, "Where was I?" "You were saying you were sensitive."

"Ah, yes. Well, here's what happened."

The story he told wasn't much stranger than what you'd expect from something calling itself a Ganoo. His channel, Protoq, was a lot like Delfrata—the mythological channel—except that most of its creatures were unheard of.

(VB told me, later, that Protoq was an early prototype for Delfrata. Apparently, He was less than thrilled with His first batch of Ganoos and Dargons and Muscorns and assorted whatnots. So He'd gone ahead and made Delfrata, trying to improve on the creatures of Protoq. Turned out, His instincts were right. After some big-time cross-channel screw-ups (wherein a number of Delfratans were popped willy-nilly into other frequencies), the elves and dragons and unicorns and trolls and such really seemed to catch on big, local color-wise. Especially on Ter, as you probably know.)

Anyway, it seems that Tipi (that's what the Ganoo called himself) was out one day with his bride-to-be and accidentally bumped into Tyler II, a member of the Dargon nobility. According to the Ganoo, Dargons are a lot like dragons, except that they wear clothes. In fact, he said they're damned fussy about their clothes, and pride themselves on being the fashion leaders of Protoq. I could see where this, in itself, could predispose them to a low opinion of the fashion-unconscious Ganoos.

On seeing that the shine on his brand new Muscorn-hide brogues had been spoiled by Tipi's little pointed feet, the Dargon had said something like: "Why don't you watch where you're going, *squirt!*"

Evidently, that tore it. Being referred to that way, and in front of his little lady and all, the Ganoo had lost it completely, and challenged the Dargon to a duel. Which would have been fine, except for one thing: Dargons, like dragons, are big and tough and mean. Ganoos, despite the lyrics of their cute little jingles, were not.

By the time he'd realized the rashness of his ways, news of the impending duel had been posted all over Tipi's village. The other Ganoos treated him like a hero. His girlfriend was gushing over his bravery, and had bought a special dress to wear to the occasion. Tipi himself was scared sheepless.

Since the pride of the Ganoos was now on the line, he hadn't dared to ask for help on his own channel. Instead, he'd paid a small fortune to have a look at the Universal Directory (an illicit, covert publication), and had picked my name. After carrying out a little research

on Terran customs (consisting mostly, I gathered, of watching some early Edward G. Robinson and Jimmy Cagney flicks), he'd used his mystic powers to wangle an illegal emergency inter-freq to my office.

"So why pick me?" I asked, as his tale wound down. "What you need is muscle. I could probably get someone to whack the Dargon for you, but I personally don't..."

The Ganoo sighed, looking sadder than a neutered bull.

"You don't understand. I can't have someone else fight for me. The rules are very strict on Protoq. No pities, no prostitutes. I challenged, I fight."

That one took me a minute. "Well, even without proxies and substitutes, you just might win," I offered.

"In a pig sty. Dargons are immune to our most potent weapon—the MYSTIC POWERS OF THE GANOOS."

Jeez, that hurt. I clamped my hands over my ears, and asked him to please stop saying that.

"Sorry. But the MYSTIC... er... those aforementioned attributes of my people... wouldn't save me even if they *did* work on Dargons. Tyler is a Prince of the Royal Dargon family. They're a fierce, proud house. Even if I managed to beat him, his family would be honor-bound to hunt me down and kill me. I'd spend the rest of my life, as sh—as brief as that might be—dodging Dargons."

"So...?"

"So I need a detective to dig up something on Tyler. Like I said, he's from a proud family. I need to find something in his past that makes him look bad. Then I could threaten to expose him if he didn't call off the duel."

I could feel the blood rising in my cheeks. "You want me to *blackmail* him?"

"Well, yes."

My collar seemed to shrink, and I tugged at it with my finger. Then I used the same finger to reach across the desk and press on his nose.

"Let's get something straight up front. I'm a detective, not an extortionist. I don't do divorces or blackmail. Not even off-channel. Not ever. Never."

He looked genuinely ashamed, then glanced toward the door, as if checking to see if we were being overheard. Gently, he slid out of the chair and leaned toward me. For a moment, I thought I detected a sinister gleam in his eye, but it seemed to disappear as he nuzzled his head in close to mine, and started to whisper in my ear. As I listened, I noticed that he appeared as innocent as a newborn. His face was almost cherubic.

"Well why didn't you say so in the first place?" I said. "Let's go!"

Now, for a select few in the Universal Network, "going" is a very flexible term. It can mean traveling in a three-dimensional way, like going to the store or the bank or the movies. Or it can mean dissolving to one of the channels on one of the thousands of frequencies in the Network, using a Universal R.E.M.O.T.E. (VB says that stands for Restorative Edit Modulators of Teleological Energy, but that's quite a mouthful. Anyway, it makes for a pretty nifty acronym, and I've learned to



live with it.) It's like pressing the button on your TV remote, and tuning in a different station. But, instead of just watching a new program, you're on it.

If you think that sounds screwy, you're probably right. But don't complain to me—I'm just an Assistant Director (and one of seven at that). Take it up with VB. He's the Head of the Network, and He claims to know what He's doing. It's His setup: I only work here.

Anyway, since going to Protoq required the latter form of travel, I reached into my top desk drawer and took out what I'd need: my own personal R.E.M.O.T.E., which I nicknamed "Spellzapper," my copy of *The VB Guide to the Universal Network*, and the key to the bottom drawer. I unlocked that drawer, removed the Saltn battery, and gave Spellzapper a fresh charge.

After checking the coordinates for Protoq in the *Guide*, I grabbed the Ganoo's hand, pushed the necessary buttons on my gizmo, and tightened my stomach muscles.

I heard the familiar *whooshing* sound, and we dissolved.

Protoq wasn't a bad place—if you like the Early Faerie motif. I prefer things a little less gingerbreadhouse-ish myself, but it'd be a great place to take the kids on a Sunday.

Tipi was less than overjoyed to be back home, though. From the moment we arrived, he began fidgeting and looking over his shoulder, to the point where he almost had me doing it, too. Between dodging the Dargons and avoiding his countrymen, he wasn't a happy Ganoo.

We headed straight for his place—a modest twenty-room castle that would've been right at home in Fantasyland—to get me into some native garb. It wouldn't do to have the locals spot Tipi with an outsider: both the Dargons and the other Ganoo's would have pegged me for imported muscle. Now, this I could easily have disproved. But word would spread that a fix was in, and that would make my job that much harder. So, Tipi had suggested a disguise.

I put on the clothes he gave me, silently relieved that they weren't from his own wardrobe. Then he applied some plastic gunk, as well as something that prickled, in the area of my head and face. I got up and looked in a mirror.

What stared back at me looked like it belonged at a Hollywood luau. The clothes were bad enough—sort of a rough-hewn leisure suit made out of burlap. But the designer potato sack was nothing, compared to my exposed fleshy bits. My ears were large and pointed, and sprouted little spikes of overgrown bristles. Worse, covering the tip of my usually aquiline nose was a large blob of rounded pinkish goo that looked remarkably like a snout.

I glared at the Ganoo. "And what am I supposed to be?" I asked.

He gave me a look that told me in a flash that I wasn't up to speed on the status quo on Protoq. "You're a Porcintrophe."

I took a quick trip down memory lane, to my high-school Latin class.

"You mean I'm a werepig," I said.

"You can get into a lot of trouble calling a Porcintrophe a werepig to his snout," he said. "But that's basically it."

"A werepig," I repeated, to make sure I had it right. When I saw that he wasn't going to correct me, I ventured, "And what the hell is a werepig?"

"A werepig is what some Protoq humanoid snouts turn into when the moon isn't full. Werepigs are very strong, and they're considered both dangerous and sacred. While you look like that, my countrymen will fear you, and shun you, but they won't actually bother you. It's a perfect disguise, if I do say so myself. Oh, wait, I knew I'd forgotten something."

He left the room and returned shortly, with what looked like a pair of pointed rubber bones. These he stuck on either side of my snout.

"Tusks, right?"

"All Porcintrophes have tusks. It's what makes them really fearsome."

He beamed at his cleverness. I wanted to choke him, but my hands were encased in phony cloven hooves.

What followed was about a twenty-minute argument wherein I absolutely refused to go outside looking like a crazed porker. I also threatened, variously, to quit, to leave immediately, to throttle him with my hooves, to throw him to the Dargons, and—in an inspired moment—to tell every other Ganoo on Protoq that Tipi had invited them over for shortbread.

He leaned forward and whispered in my ear. I took another look in the mirror. Maybe the disguise was a good idea. After all, I did look pretty ferocious. I snarled at the mirror.

The Ganoo looked pleased at my change in attitude.

"That's the spirit," he said. "Now let's see what we can dig up on the Dargon."

As we strolled the streets of Tipi's village of Z'nar, we were given a wide berth by most of those we passed—except for the occasional fellow werepig, who would nod at me, grunt, and give me what I assume was a secret hoofshake. And there were a few religious-looking types with long white beards who pulled little opalescent white pellets out of their robes, and cast them at my feet. When I looked at Tipi quizzically, he just shrugged and said, "Pearls. It's a tradition."

(As soon as the ascetics had gone about their business, I scooped up the pearls and stashed them in my sack suit-pocket. I've never been one to spurn tradition.)

The others, though—the Ganoo's, Dargons, Muscorns (just like Unicorns, only they had some sort of woodwind at the tip of their muzzles), Greenies and Vambies—kept well out of our way.

At length, we reached Castle Dargon. As large as Tipi's place was, this mile-high fortress made his digs look like a servant's quarters. In addition to being massive, it was seemingly impenetrable. The "bricks" were fashioned from some incredibly hard metal. What few doors there were, were located high up on the walls, well out of our reach. Tipi explained that the Dargons

typically flew up to these doors, or up to one of the many large windows that ringed Castle Dargon.

"They're all away today, at the Semi-Annual Z'nar Picnic and Fashion Show," said Tipi. "Dargons don't believe in having servants, so we won't have any trouble searching the place."

"Well, I hate to be this obvious," I said, "but how are we going to get in?"

Tipi looked as if I'd asked him to tie my shoelaces.

"The same way we got from Ter to Protoq," he said.

"With your Spamstopper."

Okay, color me chicken. I'm pretty good with Spellzapper when it comes to crossing channels. I just look up the coordinates in the *VB Guide*, punch 'em in, and let the gizmo do its job. Switching frequencies isn't much harder than changing channels on the telly.

But when it comes to using its other powers, I'm a hyperklutz. The whole idea of a gadget that changes reality like the pictures on my VCR makes me nervous. Call me old-fashioned. Anyway, I'd gotten in the habit of working without the aid of the magical aspect of my techno-magical tool.

But, yeah, under the circumstances, I guess I was a bit of a dunce not to think of it. Still, I was damned if I was going to let the Ganoo get one up on me.

"Actually, it's *not* the same. To get from Ter to Protoq, I used Spellzapper as a Universal R.E.M.O.T.E.—a kind of channel-crossing teleportation device. That's technology. To get us from here to there"—I pointed to the castle—"I have to use it as a . . . er . . . Spellzapper. That's magic. See the difference?"

"It's as plain as the snout on your face," said Tipi. He didn't sound impressed. "May we go now?"

I aimed Spellzapper at the closest window—about a hundred feet up—and pressed the Record button. After letting it run a few seconds, I propped the device in a nearby tree, and got a quick shot of the two of us. Then I did some fast mixing with the Edit button, pressed Play, and *poof!*

"Yow!" said Tipi.

We were standing on the ledge of the window, looking down at a one-hundred-foot drop. Maybe I should have zoomed in tighter on the interior of the window before putting us in the picture. Balancing on that ledge wasn't my idea of a good time, either. But the look on the Ganoo's face made it worthwhile.

He started shouting what I assumed to be Ancient Ganoo curses at me. I debated pushing him off the ledge, just to shut him up. When he saw the look in my eyes, he leaned forward tentatively and whispered in my ear. I decided that he wasn't such a bad little guy after all, and helped him down into the castle.

We landed at the end of a corridor, in one of the main hallways. The walls were a dark, glistening green, and the floor was a green-and-black checkerboard pattern. Some other time, I might have stopped to admire the sophisticated artwork that lined the hallway. At that moment, I was too busy trying to count the number of rooms that opened off that hallway—about a mile and a half of it.

"Which way to Tyler's room?" I asked.

The Ganoo gave me one of those looks.

"Do I look like I'm on the Dargon party A-list?" he said. "You're the detective. You tell me."

It was a snarky, overused, obvious crack. But he had a point.

The Dargons had more rooms than Burger Pig has fries. If we had to search every room, we might, if we were lucky, cover about a tenth of the place before the royal family came home. And the chances of one of those being Tyler's room were about as big as a Ganoo's baby toe.

"Maybe I can work something out using Spellzapper," I said, not really having any idea what that something might be.

"Well, that's what I'm paying you for," said Tipi.

Paying? Now that he'd mentioned it, I didn't recall any discussion of my fee. I mentioned this to him, and he leaned forward, and whispered in my ear.

"Ah! I can't argue with that," I said, and set the grey cells in motion.

While said grey cells were sorting things out, I happened to look up again at the paintings that lined the walls: one outside each doorway. Some were portraits of dragonlike creatures in a variety of poses and states of snappy dress. Others were still-lives of an assortment of fairly ordinary objects, like books, food, a piano . . .

"Hmm," I said.

"Umm," said Tipi.

"Let's check out that room first," I said, and walked over to the one with the painting of the piano.

"This is ridiculous," said Tipi. "We hardly have time for sightsee—" When he saw what I saw, he buttoned it quick.

For, as the interior revealed immediately, the room did, indeed, contain a piano, and was, of course, a music room. Ditto the painting of the books, which marked a library, and the painting of the food, which adorned the outside of . . .

"The kitchen," said Tipi. "Say, that's pretty sharp of you, Sloane. The paintings are like key-codes to the contents of each room. Picture pointers. In a place this size, that's a pretty good idea."

"That's what I figured," I said. "Now, if you don't mind, I'll need you to identify the portrait of Tyler."

Not having to go into each room—let alone search it—cut our exploration time sharply. Within a couple of hours, we'd located Prince Tyler's bedroom.

While Tipi busied himself looking under the bed, in the closet, and similar foolish places, I used my detective knowhow to save us some more time. I headed straight for the dresser, and Prince Dargon's sock drawer. After a couple of minutes of rifling through some of the most elegant-looking socks and undies I'd ever seen, I found what we were looking for.

I went over to the private bathroom that opened off the Prince's bedroom. Tipi was frantically searching the medicine cabinet, in an apparent quest for illicit drugs. I tapped him on the shoulder, and he jumped. For a brief moment, suspended in the air, he was as tall as I was.

As he fell back to the floor, and onto his Ganoo bottom, his expression turned blacker than indigo eight-balls.

"Landscape saliva!" he said. "You damned near scared me out of a century's growth. You're supposed to help me, not give my cardiac a rest..."

He probably would have gone on like that for a while, so, to shut him up, I showed him the photograph I'd found in Tyler's sock drawer.

He took the picture and studied it closely.

"So?" he said.

"Consider the social implications," I said. "Be objective."

He considered.

First, he beamed. Then he cackled. Then he held his flabby little tummy and laughed so hard that he hit the floor again, only this time he didn't seem to mind. When he'd recovered, he grabbed my hand and pumped it.

"Well, I'll be a monkey's knuckle!" he cried. "Talk about your photo opportunities. Tyler would die before he'd let his family see this. You're a genius, Sloane. Are you sure there aren't any Ganoo in your family tree?"

I shuddered at the thought. And just then, as I turned to retort with a nasty crack, I saw something that brought on the great-granddaddy of all shudders. I'd happened to glance into the full-length mirror that stood beside Tyler's closet door. As I took in the details of myself in full werewig countenance and attire, a wave of nausea flowed over and through me. There I was, in a stranger's bedroom, dressed in burlap, looking like Porky Pig with tusks and an attitude. Not only was I playing the part of a total fool: I was up to my oinkers in blackmail.

I snatched the photograph from his hand, ripped off my floppy ears, and said, "It's no good, Tipi. We can't use something like this. It's just not right."

"And I suppose it's *right* that Tyler should kill me in a duel tomorrow morning?"

"Well, no," I admitted. "But there's got to be another way."

As I spoke, I was reaching into my pocket, with the photo at a safe distance from my body. When Tipi saw what I was up to, he leaned forward quickly and whispered in my ear.

I put the lighter back in my pocket. "Can't argue with that," I said, and handed over the photo.

"Here, I'll help you with those ears," said Tipi.

The next day, Tipi and I showed up at the Z'nar Town Square, the prearranged dueling place. Tyler II was already there, surrounded by his royal entourage, and dressed in a manner so simultaneously flashy, yet elegant, that probably only a Dargon could have pulled it off. When I took in his full size, girth, and obvious strength, I almost felt sorry for the little guy beside me. But then I remembered the photograph, and I decided to feel sorry for Tyler instead.

Where Tyler had a group of about seven regal-looking lizard-folk to cheer him on, Tipi had a whole sheepfold of garishly-clad Ganoo. They looked like a sea of psychedelic pizzas, and sounded even worse than they looked. There must have been hundreds of them, shout-

ing, cheering, and singing stupid jingles. One group of about a dozen could be heard clearly above the rest:

*"When Tipi fights the Dargon, he'll tie him in a knot  
He's big at heart and that's the part that helps him  
out a lot*

*"The foppish Tyler dared to taunt and tease him  
without class*

*"Now we Ganoo will show that hug, we'll knock  
him on his—"*

"Assalyn!" shouted Tipi unexpectedly, in the general direction of the Ganoo hoard.

"Tipi!" returned a tiny but rather attractive female Ganoo, who came rushing out of the crowd and seized my client by his lapels. (Not surprisingly, she was wearing a yellow paisley chiffon dress, white socks, and red-and-green pumps.) She gave him a phenomenally large hug, and a kiss, and then stopped to appraise me.

"Tipi, dear," she said in a fairly hushed tone, "is this a ... friend of yours?"

The Ganoo made a point of eyeballing me in a most patronizing manner.

"Well, yes, my love. Jake the werewig . . . Porcintrophe, meet the lovely Assalyn. Jake has come to help me dispose of Tyler's body after I've finished with him."

"Oh, Tipi, you're so *brave*," said Assalyn, hugging him again. Apparently, she wasn't all that eager to add a werewig to her list of acquaintances.

"Nothing any red-handed Ganoo wouldn't do," he replied. "Right, Jake?"

Not only was the little weasel hamming it up, he was doing it at my expense. Expense? It occurred to me once again that we still hadn't discussed the precise nature of my fee.

"Speaking of finishing up," I said, "how about if we tie up a few loose ends before you pummel the mighty Dargon? There is the little matter of how much you're going to pay me to . . . um . . . dispose of Tyler."

"Excuse me, my dear," said Tipi to his diminutive heartthrob. "Why don't you wait over there, while I settle these tedious financial details with my werewig?"

"Of course," she said, more haughtily than I thought necessary, and retreated into the crowd.

"Now, as I was saying . . ." I said.

"Shh," said the Ganoo, "someone will hear you." He motioned me to bend down, and whispered in my ear. His voice was quite soothing. I noticed, for the first time, that it reminded me of silken waves lapping gently over velvet stones.

"Well, we'd better get started, then," I said, and Tipi and I approached Tyler and waved him over to the rear of a small concession booth. The Ganooian vendor was selling stuffed Dargon dolls and small plastic Ganoo, both sporting ribbons that said "The Winner." No matter what the channel, business is business.

Tyler, who was manifestly certain of the outcome, didn't seem to have any objections to the private meeting. He waited smugly and patiently while Tipi went over to the vendor and gave him some incentive to get lost for a bit.

When Tipi returned, Tyler the Second said, "So, toadstool, I suppose you've decided to apologize. Unusually smart move on your part, I must say. But why bring the pig man? I'll give you no trouble, so long as you make the apology good and loud." He stepped back and gave the Ganoo an exaggerated once-over.

"As loud, perhaps, as your attire," he added. Then he blew on his ten-inch fingernails in a ridiculously affected fashion that, somehow, suited him.

Tipi smiled. He took out a copy of the photograph and thrust it in Tyler's face. "Before I do anything, you might want to have a look at this. Take your time, and don't worry about getting it dirty. I have plenty of copies." He stepped back a pace, and waited.

Now, in case I haven't mentioned it, Dargons, being the prototype for dragons, and being like dragons in every way other than their passion for fashion, are green. So, I can't say that Prince Tyler II turned green when he saw the photo. But he did turn several interesting shades of red, from crimson and scarlet right through to fuchsia and the deeper maroon and then back up the spectrum to vermilion. At length, he returned to a reasonable facsimile of his normal, healthy green.

"You've been in my sock drawer," he moaned.

"And some fine socks you have, too," said Tipi, in a cheery if obnoxious little voice.

"Has anyone else seen this?" said Tyler, evidently contemplating as many as a dozen nasty possibilities.

"Of course not," said Tipi reassuringly. "Do we look like monsters?"

Tyler glanced meaningfully in my direction, but Tipi ignored it.

"And no one ever will. So long as you make your formal apology to me good and loud. As loud, perhaps, as your big mouth."

"What were you doing in my sock drawer?" said Tyler, who seemed bent on not dealing with the true horror of his predicament.

"What were you doing in that getup?" said Tipi, suddenly frothing with moral outrage, as he snatched the photo from the Dargon's claws and slapped it into my hand.

I glanced at the snapshot again. As I compared the almost scientifically natty Tyler in front of us with the gonzo-garbed creature in the picture, I was curious to hear the answer myself. For, whereas the former was the very quintessence of sartorial excellence, the latter was . . . well, not.

The Tyler in the photo was dressed like a Ganoo, from the silly multicolored floppy hat on his head to the huge, pointed shoes on his size twenty-six feet. He wore a yellow, violet, and chartreuse-colored waistcoat that was several sizes too small for him, and a pair of rumpled red-and-white clown-checked breeches. Around the collar of his plain brown shirt, hanging as limp as overcooked spaghetti, was a glow-in-the-dark neon-orange string tie.

Tyler saw the look on my face and broke down.

"I'm so ashamed," he whimpered. "I only did it . . . for her. She was so insistent that I wear that . . . that ghastly outfit. And I was mad about her. She was young,

and I was . . . um . . . green. She made that costume with her own tiny hands, then brought it over one night and begged me to pose. She took the picture herself, with one of those cheap instant cameras." He shuddered.

"As soon as I saw myself, looking like a . . . like a . . . well, like *bim* . . . I knew that it was wrong. That we were wrong. I grabbed the picture from her hand, and told her to leave. That was the last time I ever saw her. Socially, that is. Protoq is a small world, and Z'nar is a small town. But we haven't spoken to each other since."

He started to weep, and his tears fell like tapwater on a sponge, disappearing into the ground like raindrops in sand.

Even Tipi was moved. He walked over and patted Tyler on the back.

"Oh, why'd you have to go into my sock drawer in the first place?" said the miserable Tyler II.

"What's this about socks?" said a high-pitched petulant voice. It was Assalyn. "You're keeping everyone waiting."

The voice was, in fact, so high-pitched that I was startled. I dropped the picture. Before I could retrieve it, Assalyn had snatched it up. She took one look and froze. In that same instant, Tipi froze. Tyler, who had already been frozen for quite some time, remained so.

"Not!" said the Dargon pitifully.

But it was apparently too late, in all kinds of ways. Assalyn had begun to cry. "Oh, Tyler," she said, "how *could* you?"

I have to admit that I'd been wondering that myself. Not how he could have dressed up like an idiot, or even how he could have let her take the picture in the first place. Everyone plays the sap at some time in his life. But why the hell had he *saved* the evidence?

Tyler fixed her with a look that would have curdled shaving cream.

"I kept it as a reminder."

Now, I thought that might be a cue for Assalyn to fling herself into his arms, and for a moment, I thought she was going to. But I guess that white heat in the Dargon's eyes held her back, and he continued.

"A reminder to never, ever . . . *for the remainder of my pathetic existence!* . . . involve myself with the female of the species. Any species. On those occasions when I've been tempted to falter, one look at that ghastly photo has been more than sufficient to cool my . . . er . . . heels."

After the outburst, Tyler and Assalyn just stared silently at one another. At that moment, they were probably the two most miserable-looking creatures on the channel.

Well, maybe not. As the looks went from Tyler to Assalyn, and Assalyn to Tipi, and Tipi to Assalyn and Tyler, it was obvious that Tipi, too, would have a swell shot at that title.

"You Jesus Bell!" cried Tipi.

Assalyn turned at least as many varied shades of red as Tyler had previously, dropped the photo, and ran away sobbing.

"Men are so hateful," she whimpered, as she disappeared into the throng of now-restless Ganooes.

It was Tyler's turn to commiserate. He put his arm

gently on Tipi, who looked as if he just might want that duel after all. When Tyler touched him, he flinched, but didn't budge.

"Sorry, old sport," said Tyler, "but you were the one who went into my drawer. And anyway, it was, as I said, all over long ago. I suppose you can see now why I insulted you the other day. I didn't realize it myself at the time. But when I saw you two together, something snapped inside me. I wanted to hurt you, and her, in any way I could. Killing you in a duel seemed to be as good a way as any."

"My cook is goosed," said Tipi.

"Nonsense," said Tyler. "It's probably all for the best. Can you imagine spending the rest of your life with a woman who dresses like that?" He glanced awkwardly at Tipi's own attire, and added, "Of course, a dashing fellow like yourself can carry it off to perfection."

Tipi seemed unconvinced.

"Anyway, there's certainly no need for us to fight now. Being a noble, if hot-headed, sort, I'll gladly make my apology public. In a way, this has all been very therapeutic for me."

"Terrific," wheezed the Ganoo. He seemed even smaller than he had in my office.

I sensed an ebb in the general backwash of emotions and decided this might be an opportune time for me to pipe up.

"Well, I suppose my services are no longer needed," I said. "So, if no one objects, I'll be popping along now."

No one objected. In fact, no one seemed to notice that I'd spoken.

"Ahem," I said, more in the direction of Tipi than of Tyler. "Before I go, there is that little matter of my fee."

Tipi fixed me with a deadly eye. "Come over here, and we'll take care of it," he said.

"Are you sure you'll be safe with that Porcintrophe? He looks a nasty sort to me," said Tyler.

"No problem," said Tipi, and he leaned forward and whispered in my ear.

A few more comments and a few moments later, still in full werepig regalia, I programmed Spellzapper for Earth, dissolved, and left Protoq far behind. Or wherever.

Fortunately, my coordinates were right on the money. My office was just as I'd left it, minus the Ganoo. With no small amount of joy, I threw the hooves into my desk drawer, peeled off the makeup, and exchanged the bur-lap sack for one of my better suits. I put Spellzapper safely back in its hiding place and considered the case.

All in all, things had gone pretty well. I had no reason to doubt that Tyler would keep his word. And I didn't doubt that Tipi would at least pretend to accept the apology, either, for the sake of The Almighty Pride of the Ganooos, or whatever.

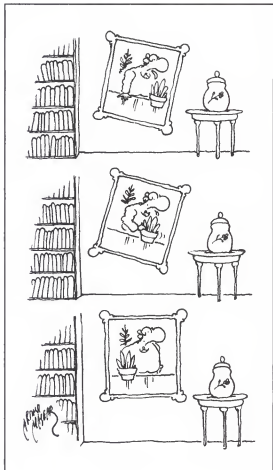
I was fairly sure, too, that even Assalyn would come out of the whole thing smelling like a tea rose. She'd probably latched on to a new male Ganoo friend soon after she'd rejoined the crowd. As I said, she was kind of attractive, for a Ganoo; besides, she didn't strike me as someone who liked being alone for too long.

After I'd thought about it a while, it occurred to me that I really didn't care what any of them had done after I'd left. I was just glad to be done with the whole dirty business. Blackmail! For the life of me, I couldn't figure how I'd let that damned Ganoo talk me into helping him in the first place. And *pro bono*, to boot. The little rat hadn't given me a cent.

Well, at least I had those pearls. I figured they'd fetch a hefty price if I could find some way to account for them. (And a moderate price, in less respectable quarters, even if I couldn't.)

The one thing that really bothered me was that I never did get to find out about the Mystic Powers of The Ganooos. I'm sure I asked Tipi one more time before I left, and I vaguely recall him leaning forward and whispering in my ear, but . . .

Anyway, I decided not to do any further business with Ganooos. And no more freebies, either. From that time on, no matter who the client, it's been cash on the barleyhead for me. ♦



# Wellsprings of Dream

Poul Anderson

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About thirty years ago, when I was at a party where most of the guests were scientists and their spouses—several of whom were also scientists—one complimented me on my work. Now, I am not at all humble, but I have known too many self-important jackasses to want anybody numbering me among them. Therefore my answer was, "Thank you. Actually, though, I'm just a barnacle on the ship of science."

Shortly afterward, in a lecture at the Air Force Academy, I introduced a less modest metaphor for science fiction as a whole, calling it the tribal bard of science. As poets in heroic ages, from Homer onward, celebrated great deeds, upheld ideals of courage and steadfastness, and fabled of wonders, so does science fiction do for the adventures, discoveries, and achievements of science and technology—evoking the Scylla, Polyphemus, Lotophagi, and Circe, as well as the serene Phaeacia and triumph over evil, that are potential in our future.\*

On either occasion, I was trying to express the relationship of science fiction to science and modern science-derived technology. It is a dependency, which the two sciences

bracket. We writers are not really barnacles, impeding progress. Some of what we do, especially for the screen, might be so regarded; but as a rule we simply go along on the voyage. Nor are we quite bards, necessary to the inspiring and immortalizing of accomplishments. Yet we do make these come alive for our readers, we do awaken dreams in many young people that lure them into such careers, and once in a rare while a story has actually sparked an idea in some worker.

Doubtless various of us will disavow this secondary status. At best, they will say, it was something we have outgrown. They will point to the fact that rather little science fiction has much, if anything, to do with real science; that a large part of what writers try to pass off as science is either gobbledygook—what Norman Spinrad more charitably calls "rubber science"—or outright false; and furthermore that this is not only the case today but has been from the beginning of the literature.

Others will claim that science fiction goes in the van of science, or that it is visionary in the way that the prophets of Israel were. They will recite long lists of inventions and events allegedly anticipated by it. With regard to pseudoscience, they will argue that we can never be sure we have found ultimate truth. The natural laws and phenomena we know may be special cases. Revelations may be awaiting us comparable to those of Galileo, Newton,

Planck, Einstein. Then why shouldn't we, for story purposes, postulate hyperspace or psionics or whatever?

Why not indeed? I've done it often enough myself, besides writing my share of pure fantasies. Nor do I say anything against stories about social problems, individual angst, or other motifs, including plain old-fashioned derring-do. Much fine work has been done in all these categories. The diversity of contemporary science fiction is perhaps its greatest strength.

Nevertheless I maintain that it has a direct and vital connection to science. Without this, it would have no particular reason to exist. It would soon fall into sterile self-imitation and presently wither away. There have been times in the past when that came near happening; but we were saved by writers who drew freshness by turning back to reality, especially to the realities of science and technology.

The space-time universe around us is infinitely more wonderful, complex, surprising—yes, imaginative—than our minds. You don't see anything new by looking in the mirror, but by looking out the window. The boldest, most exciting intellects in our world belong to practicing scientists. They were the ones who foresaw everything from space travel and nuclear power to bioengineering and ecological crisis. The role of science fiction, honorable but lesser, was to fill in flesh-and-blood details. As for visions, we writers have never

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\* Jerry Pournelle came up with the same figure of speech on his own. Likewise, we both independently formulated the basic law of human effort, "Everything takes longer and costs more." The First Law of the Sea was our joint discovery while on a sailing cruise: "It's in the bilge!"

matched the transcendence of what some scientists have beheld. Nor do I expect we ever shall. We can only hope for another Stapledon to put it into fictional terms, as he did the cosmology of his period. That will be no minor success.

These reflections were prompted by reading Freeman Dyson's recent book *From Eros to Gaia* (1992). A more obvious starting point might have been K. Eric Drexler's *Engines of Creation* (1986). However, his pioneering study of the nanotechnology soon to be ours, with all its promise and danger, has gotten plenty of attention. That bodes well for science fiction. True, many writers have misunderstood and misused the ideas, while for many others they have become merely the latest cliché. This was inevitable, and does not detract from those excellent stories that have been written and will be written by authors who do their homework.

Freeman Dyson's earlier books, *Disturbing the Universe* (1979) and *Infinite in All Directions* (1988), have already given source material to some among us. (*Weapons and Hope* (1984), though its most immediate concerns are happily outdated, remains a rich lode for the sociologically minded.) The Orion project on which he worked, a spacecraft to be propelled by atomic bombs, is one example. It led to my *Orion Shall Rise*, Larry Niven and Jerry Pournelle's *Footfall*, and probably more, in spite of the undertaking having long since been abandoned. Such is the force of a big idea.

The Dyson sphere offers a still more conspicuous instance. The concept is, essentially, that an advanced civilization in need of living space might dismantle the planets of its system—at any rate, the one or two largest—and englobe the sun at a suitable radius. It would not be with a continuous shell, gravitationally unstable and otherwise impractical, but with a cloud of small bodies in separate orbits. A sphere like this, capturing the whole output of the star for the benefit of its inhabitants, must reradiate the energy at infrared wavelengths. Dyson suggested that astronomers search for objects of that kind. Of course, he did not claim

that any exist, nor that any infrared sources would necessarily be artifacts, only that the investigation was worthwhile for its own sake.

Larry Niven modified the image to create his *Ringworld* and its sequel. A few others have used it more directly. The story possibilities are by no means exhausted. Consider what a civilization so old and so mighty could be like; consider those swarming worldlets, each maybe unique; ask yourself how your characters get there, what the voyage is like, why the Builders have apparently never come to us; evoke something of the vastness and mystery of the cosmos.

Dyson deals with more than immensity. Kenneth Brower's *The Starship and the Canoe* (1978), a fascinating and moving book, seems to me to embody a fundamental mistake. It tells of the conflict between Dyson and his son, and their eventual reconciliation, as if the father were an archetypal high-tech zealot, opposing the younger man's return to a life in living nature. Actually, Dyson's own writings make clear that he is intimate with the traditional humanities, feels as deeply about the natural world as anyone, seeks to learn what its troubles stem from, and has concrete proposals for mending matters while preserving liberty. Little or none of that is true of the Green politicians and the ecofascists, although of course it is true of his son and other reasonable people who care.

Illustrating this and going again beyond, I will draw mainly on *Infinite in All Directions*. *Disturbing the Universe* is primarily autobiographical; *From Eros to Gaia* is a miscellany, much of it about the extraordinary persons Dyson has encountered. Both still brim with ideas, which overflow and fountain from the first-named.

Let us, for instance, consider global warming through greenhouse effect. Dyson declines to join in the hysteria about it. Like most honest scientists, he points out that we have no hard evidence for or against its reality. What we have is merely some computer models of phenomena very poorly understood, and the

conflicting predictions we get from them. That scarcely justifies radical measures of enormous cost and incalculable social consequences.

This becomes especially plain once we inquire whether a certain amount of global warming is undesirable. As Dyson observes, we have no cause to believe that Earth's present set of climates is optimal. The planet was in fact warmer a thousand years ago, when Norse settlers raised crops in Greenland, than it is now. Whatever the price of coping with such changes as a rise in sea level, quite likely it will be far lower than the price of cutting back the industries by which all but a tiny elite live.

Don't suppose Dyson is complacent. He raises some real questions. For one, our measurements account for only half the carbon dioxide that we know our activities are putting into the atmosphere. Where is the rest going? Into the oceans? Into the biosphere? We have no solid information. Without that, we flat-out cannot tell what we ought to do or stop doing. Our cures could prove catastrophically worse than the disease.

Meanwhile, for every carbon atom in the fuels we burn, two oxygen atoms are tied up, not to mention what combines in water and other oxides. What about the environmental effects of that? At the time Dyson was writing, efforts to measure this change were minuscule. They appeared to indicate that a significant oxygen depletion is going on. Again, we do not know what is actually happening—the balance between chemical reactions, or how they work—nor what could result from any policies we adopt. We desperately need more science: genuine science, not politically correct charades.

I should add that Dyson expresses himself less vehemently and more politely, which heightens the convincingness.

In short, his is a voice of both concern and reason. It is also a voice of imagination. He tells us that we can probably bring carbon dioxide and oxygen under control by extensive, worldwide reforestation. We can be certain this would be safe. Ample land is available, not currently farmed

or grazed. The program would, not so incidentally, make our planet again beautiful, pleasant, and life-full.

He remarks wryly that the environmentalists won't like this program because it denies their gloom-and-doom scenarios and their Luddite ideals, while the conservatives won't like it because it requires large-scale government action. Here I beg to differ. Conservatives have nothing in principle against government action, if it be for worthy ends not otherwise attainable. Libertarians, among whom I count myself, ought not to perceive this plan as a threat to freedom; on the contrary.

The politics of getting reforestation started, and the kind of society that ensues, could be the theme of a major science-fiction novel.

Looking toward the next century, Dyson sees molecular biology and neurophysiology as two of its dominant endeavors. The third is space-faring. Between them, they will transform the world and the human condition.

He spins off a dazzling array of possibilities. How about an energy tree, using sunlight to produce fuel that its roots then convey to the pipeline? How about a worm that mines ores or a turtlelike creature that scavenges and reprocesses waste materials? How about plants that can grow on Mars, not hypothetically terraformed but as it is? How about a vine that can grow on comets? How about the space butterfly, massing a kilogram or two, easily launched, which once in orbit metamorphoses, growing solar-sail energy-collector "wings," organs of locomotion and manipulation, and an artificial intelligence adequate for exploratory missions? How about humans comfortable when naked in raw vacuum and weightlessness? Further ahead, how about spores sent across the interstellar gulfs, designed to unfold as a new ecology and a new intelligence on the planets of other stars?

Some people will recoil from prospects like these. They will speak of Frankenstein, hubris, blasphemy. To Dyson, it is no more than a continuation of what life has been doing ever since it arose in the primeval waters of Earth. He foresees the greening of

the Solar System, the galaxy, perhaps at last the universe. For my part, I think he makes us fiction writers look pretty tame and stodgy. We have a lot to learn from him and his kind.

Life, intelligence, has even a chance of outliving the stars. But let us backtrack a little before we go on to the utterly stupendous.

Hans Moravec, one of our foremost roboticists, surely adds his science and technology to Dyson's three leaders in the next hundred years. This implies no contradiction or rivalry. They are all ultimately about the same thing, the subtleties and complexities of matter-energy interaction, from the quantum level on upward. Our distinctions between organic and silicate, natural and artificial, life and machine, are disappearing. Like space and time, in Minkowski's famous statement about general relativity, from now onward these classes sink to the position of mere shadows, and only a sort of union of them can claim an independent existence.

Moravec's book *Mind Children* (1988) gives an authoritative short history of his field to date, and goes on to enthusiastic forecasting. He sees artificial intelligence fully equal to the human in another 40 years or so. This optimism has its doubters, including me, but it may well prove true, and Isaac Asimov didn't use up the stories to be told about such a development occurring within the lifetimes of the majority now on Earth. Rather, his admirable tales will look as quaint as Kipling's great wars, around 1910, about globe-girdling lighter-than-air craft. The entire world will have been transformed.

For a single aspect, think of virtual reality. At present it is a toy just beginning to become a tool, in a few specialized areas such as architecture. Moravec sees it taking over industry as the computer did and pervading everyday life as telephones and television do. Science-fiction stories about whole societies of people hooked up additively to their dream machines are old. They are also unbelievable. To the best of my limited knowledge, nobody has yet attempted a serious treatment of the effects.

This will be the more difficult to

do because the forms and functions of the similarly pervasive robots are unpredictable, except that they will be legion. Moravec proposes a delightful, fractally dendritic "bush," but simply for an example. (I adapted this to an extraterrestrial sophront in *The Boat of a Million Years*. I steal only from the best sources.) The real significance will lie in the artificial intelligence itself, and its interplay with us.

Among other possibilities, Moravec discusses several different ways in which a human personality could be transferred to a computer matrix with a robot body. Some science fiction has employed this, but not in the depth that the subject warrants. What will personality, individuality, mean? What will be the new capabilities—and limitations? How must the mind change as its long years of existence pass by, and how can it? How must and can society change? What happens if the dead are "resurrected" as recreated minds, or if personalities are synthesized to order? What tales to tell!

Meanwhile, Moravec thinks, the artificial intelligences will rapidly improve themselves, and soon be incomprehensibly superior to the human. Again, this is not an uncommon theme in science fiction, but one not well explored. It seems unlikely to me that humankind will either go gently into that good night or settle down as parasites on the machines. The relationships that evolve ought to be multitudinous and mutable. Moravec gives some intriguing hints.

In the long run, though, he says, it is our "mind children" that will continue our heritage and carry it to heights unimaginable by us. Here we find his thought converging on Freeman Dyson's. Before going on in that direction, I will backtrack afresh, to another remarkable book.

This is *The Anthropic Cosmological Principle* (1986) by the British astronomer John D. Barrow and the American mathematical physicist Frank J. Tipler. Many readers will recognize these names, Barrow's for his popular accounts of science, Tipler's for some of the most amazing real-science concepts to come before us since the Big Bang.



As far as I know, Tipler was the first to demonstrate rigorously, almost twenty years ago, what has later been shown by other routes: that a sort of faster-than-light travel and a sort of time travel are not incompatible with general relativity. The requirements may be physically impossible to meet (Tipler slyly quoted Simon Newcomb on the subject of heavier-than-air craft) but they don't violate the laws or the mathematics. I was quick to seize upon this idea for *The Avatar*, and Larry Niven got an ingenious short story out of it, but few if any other writers seem to have noticed. That hardly matters by now, in view of what has been learned about such things as black holes and what Tipler has since been up to.

Why is reality as it is? In scientific terms, why do the important quantities of physics (the gravitational constant, the fine-structure constant, Planck's constant, the charges and masses of the elementary particles, the present size and age of the universe . . .) have the values they do? Are these values fortuitous, arbitrary, or is there an underlying logic by which they must be what they are? *The Anthropic Cosmological Principle* attempts to find an answer.

In its weak form, the principle looks almost like a tautology. The universe that we perceive has the characteristics we perceive because if they were otherwise, we could not exist to observe it. Almost a tautology; not quite. As Barrow and Tipler declare, it restates a fundamental of science, "that it is necessary to take into account the limitations of one's measuring apparatus when interpreting one's observations." A writer who can't see story possibilities here, whether or not they are possibilities he or she cares to use, had better get out of the science-fiction business.

More controversial is the Strong Anthropic Principle: "The universe must have those properties which allow life to develop within it at some stage in its history." The reasoning behind this claim involves quantum mechanics and the enigmatic relationship between observer and observed, experimenter and experiment. Indeed, the book gives a

deep look into that area of physics.\* It does the same for cosmology and even biology. The reader, though, must be willing to concentrate and think.

The Final Anthropic Principle goes further yet, and is admittedly a *non sequitur*: "Intelligent information-processing must come into existence in the universe, and once it comes into existence, it will never die out." Ah, but what if this should be true? The book culminates in a stunning exploration of what that could mean.

Nonetheless the authors set forth what amounts to a science fiction heresy. So much the better; we need heresies, to shake up and sometimes supplant our orthodoxies. Barrow and Tipler assert that intelligent life must be very rare. It may well be unique to Earth. Life itself may be.

As scientists, they argue from what we know, the single specimen we have, our planet. It seems there was nothing inevitable about the course, or rather courses, that evolution took. (In this brief review, I pass over an impressive amount of details.) True, such "inventions" as the eye and the wing were made repeatedly, independently, because they confer advantages. But only one lineage among countless others went in for intelligence, and only the hominids developed it highly. If anything, a big, energy-hungry brain is a biological handicap, akin to the overgrown antlers of the Irish elk. Special circumstances must have been needed for it to be viable. The whole progression was such a chain of improbabilities as to make vanishingly small the likelihood of anything analogous elsewhere.

Another argument against extraterrestrial intelligence is that we have no evidence for it, whereas we should if it exists. The authors answer Fermi's question—"Where are they?"—with a thoroughness that uncovers innumerable story plots. All it takes

is one high-tech civilization, or just a few determined individuals within one, and a few million years; then, if nothing else, its von Neumann-type robots will be everywhere in the galaxy. If nobody has wanted to make this much of an effort, why don't we at least see attention-getting beacons? Any of several kinds would be cheap and easy to set up. The simplest explanation of the Great Silence is that nobody lives yonder.

The nonexistence or extreme rarity of alien minds also has cosmological implications, ruling out certain models, which provides a separate test of the statement. I don't have room to go into that, or into other marvelous concepts—most notably, perhaps, the many-worlds interpretation of quantum mechanics—that are discussed. Let me only say that here is the stuff of the scientific frontier, where writers should seek who hope to break new ground.

Obviously, I disagree with Barrow and Tipler on a number of points, including the matter of nonhuman sophonts. Plenty of scenarios will accommodate their objections. But whether we accept or deny their picture of a universe in which we are essentially alone, we science-fiction people have a lot of rethinking to do. We can't stay in our dear old conceptual cosmos—not if we want to go on calling ourselves pioneers. Fortunately, a number of us are already outboud, in a number of different directions.

However common or sparse it may be, life is not necessarily an accident, an epiphenomenon, doomed to perish with the stars. Here we come to the point where Dyson, Moravec, Barrow and Tipler meet. They are not the first to venture there. J. D. Bernal did in *The World, the Flesh and the Devil* (1929) and Olaf Stapledon, fictionally, in *Star Maker* (1937). What we now have offered us is an eschatology for today. What we need is a genius who will make a story of it.

Granted, these thinkers do not see precisely the same future. Doubtless they would debate vigorously among each other about the form of it. None of them claims to be a prophet. Here are speculations, imaginings.

\* Likewise does Roger Penrose's *The Emperor's New Mind* (1989), also highly recommended, especially since Penrose disputes the algorithmic model of intelligence that Moravec, Barrow, and Tipler take for granted. A variety of opinions stimulates thought.

Yet how well timbered they are with genuine science, and how high-flung!

Rather than go over them point by point, which the authors do better anyway, let me give you a hasty overview of what they seem to have in common.

Intelligence expands through the future universe. It does this not by hyperspatial jumps nor, usually, by settling planets, but by relativistic conveyances and self-replication. There is ample time, billions upon billions of years. The intelligence is probably not embodied in what we would call life; but it is aware, it thinks and feels, dares, loves, sorrows, creates, and carries within it something of us, an inheritance, even a memory. Although its variousness becomes as enormous as its range, always there goes an undertone of communication—across parsecs, light-centuries, intergalactic distances, a little like us today reading the words of Homer or Confucius and their far-off descendants reading our words. Think how many stories lie in the mere 5,000-

odd years of recorded history on this single globe, then think onward.

But meanwhile the universe ages. Stars flare up and gutter out; fewer and fewer new stars form; galaxies disintegrate; night advances. A quadrillion years from now, the last white dwarfs have cooled to black, and only proton decay (if protons do decay) keeps their temperatures a few degrees above absolute zero. Eventually nothing is left but electrons, neutrinos, and photons. The time for this as measured in years is counted by 1 followed by more than 100 zeroes; but it will come, it will come.

That is, if the universe is open, continues expanding forever, whether or not the rate of expansion slows down to almost nothing. We today don't know. Perhaps it will reach some maximum size and collapse, back to the fire and then to the singularity in which it began, perhaps to rebound in a new cycle with every trace of the old obliterated. Perhaps. We don't know.

In either case, intelligence could

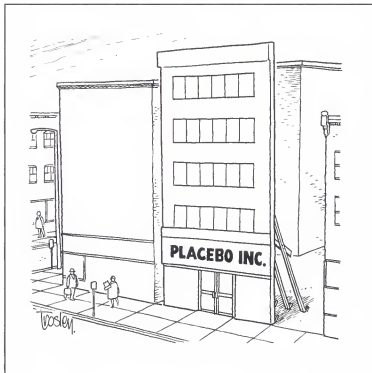
live eternally. We cannot say that it will, but we can say that this is scientifically conceivable.

Dyson pictures an open universe in its deepening darkness, where beings make for themselves a succession of forms, finally changeable configurations of leptons. With energy ever less available, life and thought must go ever more slowly, but these minds remain wholly alert. In fact, to them communication across astronomical distances has become fast and easy; and thus they may at last join together in a oneness that continues through time without bound.

Barrow and Tipler consider this possibility. It does not violate any law of physics. They then look at the alternative, a closed, collapsing universe. They find that, although it will only last for a finite time, within that span an infinite number of events—thoughts, experiences—can occur. That includes the transmission of signals; and thereby the light-speed barrier is not broken, but transcended. So here, too, a single immortal intelligence may come to fill the cosmos, our whole universe and any others there be. Following Teilhard de Chardin, the authors call this the Omega Point.

They could almost as well call it God. Indeed, in later work of his own, Tipler draws overt parallels to theology. An Omega Point will be able to know everything about all that ever occurred, whether directly or by brute computational force. It can, if it chooses, resurrect us: you, me, everybody. That will be as computer programs, but we won't sense the difference, nor will it matter; we will live anew, perhaps made perfect. Tipler suggests that the Omega Point may do this not because it has to, which of course it doesn't, but because it loves us.

Sheer imagination, yes. I don't believe in it myself. But what an imagination! And not idle daydreaming. None of these concepts are. They spring from the ground of science as ballet does from the everyday dynamics of walking or myth did from everyday birth, life, love, death, mystery. From them, in turn, can spring some grand science fiction. ♦



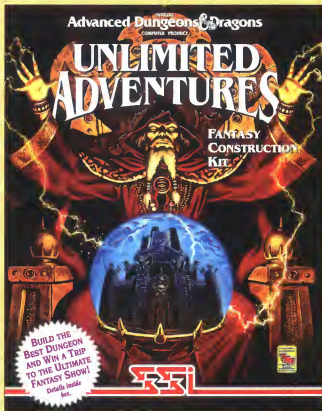
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# The Clorox World

Stephen L. Gillett

Chlorine and fluorine breathers haven't been common in SF for a while. They're pretty difficult to arrange. For one thing, both elements are a lot rarer than oxygen. This is especially a problem with fluorine since it's such an active element. Just from the chemistry, you can imagine a fluorine atmosphere over seas of liquid hydrogen fluoride, such as H. Beam Piper's planet Niflheim in *Ulter Uprising*. But there's so little fluorine around—and so much oxygen—that such a world is extremely unlikely. (As I noted in "Worldbuilding 101," in the March 1993 issue, fluorine is a better oxidizer than oxygen, and replaces oxygen right out of its compounds.)

Chlorine breathers aren't likely, either. To be sure, chlorine is less oxidizing than oxygen, so it doesn't replace oxygen out of its compounds the way fluorine does. And chlorine is about five times as abundant as fluorine. However, its chemistry is quite a bit different.

For one thing, it doesn't react with organic matter very enthusiastically, much less so than does oxygen. On an atom basis, you get about six times as much energy by reacting carbon with oxygen instead of chlorine, and three times as much energy by reacting hydrogen with oxygen. (The energy of food comes largely from the carbon and hydrogen it contains.) So you can't really imagine critters "burning" food with chlorine to get energy, the way Earth critters "burn" food with oxygen.

You also *can't* imagine a chlorine atmosphere over seas of liquid hydrogen chloride. The chemistry is just not analogous, even if you could somehow gather enough chlorine

together to try it. For one thing, hydrogen chloride is *cold*. It freezes at  $-114.8^{\circ}\text{C}$ , and boils at  $-84.9^{\circ}\text{C}$ . The boiling point of chlorine itself is only  $-101^{\circ}\text{C}$ —so the very breathing stuff in the atmosphere would condense out onto HCl ice! Obviously, this doesn't happen in the water-oxygen system; droplets of  $\text{O}_2$  don't condense onto water ice. The small liquid range of HCl would also be a problem.

However, all is not lost. There may indeed be a way to set up a chlorine-bearing atmosphere, but as a variation on a generally Earthlike world: the water-oxygen-chlorine world. And such a hybrid has received no attention in SF, so far as I know.

So let's (as usual) start by considering Earth. Chlorine is an "incompatible" element that doesn't fit well into the compact silicates of the mantle, so over the Earth's history geologic processes have tended to gather all Earth's chlorine together at its surface. (This is another example of the value of a planet as a giant chemical fractionating plant, by the way.)

In fact, most of Earth's chlorine is dissolved in the oceans. It's present as the chloride ion,  $\text{Cl}^-$ , which has an extra electron attached to the atom, and which also has a strong affinity for water solution. (Obviously, in a water solution you must have equal numbers of positive and negative ions, because the solution has no electrical charge overall. So of course positive ions are also present in sea water. But when we talk about a "chloride" solution, we don't really need to worry what those positive ions are. For example, when you dissolve salt—sodium chloride,  $\text{NaCl}$ —

in water, the crystals break up into separate positive sodium ions,  $\text{Na}^+$ , and negative chloride ions,  $\text{Cl}^-$ . But the chloride ions don't "remember" that they came from an  $\text{NaCl}$  crystal.)

Anyway, the chloride ion's extremely stable, of course; otherwise the extra electron wouldn't stay attached to it. In fact, it takes quite a bit of energy to strip that electron away. But with all that chloride there in the oceans, surely there's something science-fictional we could do with it?

Suppose some plant in the oceans evolved the capability to make chlorine from chloride by stripping that electron away again, using the energy derived from food. (And, of course, a special enzyme system.)

Why would it bother? Well, say, as a defense mechanism. It could then incorporate the chlorine into its biomolecules to make itself a poor meal for predators—making its own natural chlorinated pesticides, if you will. But predators will eventually evolve a defense to that, too. Then, the continued escalation of the biological "arms race" may eventually result in plants releasing free chlorine—still as a defense mechanism, a natural gas attack.

You'd end up with what is still basically a water-oxygen world, like Earth, but with a smidgen of free chlorine in the atmosphere—a "chlor-oxygen" world. For starting out Earthlike, the planet hardly ended up that way! (James Lovelock, in his book *Gaia*, noted that a major biocatastrophe, comparable to that caused by the first release of oxygen itself, would have occurred if some alga had "learned" to do this in the Precambrian.)

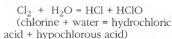
Let's look at some of the effects. First, it will be smoggy. Chlorine is colored; as all the chem texts say, it's a "greenish yellow" gas. It absorbs blue light (and shorter wavelengths) strongly. But from space it probably won't look too unEarthly, at least at first glance. It may just look kind of misty. (Look through the atmosphere along the edge of the planet, where there should be a distinct green-yellow cast to the air.)

In fact, light with wavelengths shorter than about 490 nanometers (billionths of a meter), which lies in the deep blue, actually breaks apart (photodissociates) the atoms in a  $\text{Cl}_2$  molecule. (Chlorine, like most elements that are gases, comes as molecules containing two atoms:  $\text{Cl}_2$ .) This photodissociation makes free chlorine atoms, which in turn will be highly reactive. Among other things, they'll probably make an ozone layer impossible, since chlorine atoms are very good at breaking ozone back down into ordinary oxygen. As you know, the Earth has a layer of ozone,  $\text{O}_3$ , high in the stratosphere that protects the surface from high-energy ultraviolet (UV) light put out by the Sun. However, the chlorine itself may absorb enough UV to make up for no ozone.

Besides  $\text{N}_2$ ,  $\text{O}_2$ ,  $\text{CO}_2$ —and the dab of  $\text{Cl}_2$ —the atmosphere will contain traces of many other things, such as water vapor,  $\text{HCl}$ , and chlorinated organic compounds—of which more anon. (Including, no doubt, detectable amounts of phosgene,  $\text{COCl}_2$ . Phosgene is a useful starting compound for many industrial syntheses, but it's extremely toxic; like chlorine itself, it was used as a poison gas during World War I.)

Another quirk is that chlorine is heavier than oxygen and nitrogen. It's even heavier than  $\text{CO}_2$ . Thus it will tend to accumulate in low places and be an asphyxiation hazard. Cave exploration will be a high-risk activity on Clorox. (If there's a local civilization that buries its rulers in tombs *a la* ancient Egypt, this phenomenon will help keep the tombs safe. Even the locals will get asphyxiated sometimes: remember, they don't breathe chlorine! They're oxygen-breathers that can tolerate a lot of chlorine.)

Chlorine also reacts with water, in what we might call the "swimming pool reaction":



You've already guessed that this chloroxygen world has a dreadfully corrosive environment, and this is one reason why. I call this the swimming pool reaction because it's used in large commercial swimming pools (and in municipal water supply systems) to disinfect them. Hypochlorous acid is a disinfectant—"Clorox" is a dilute solution of its salt, sodium hypochlorite—and if you're dealing with a lot of water, it's much cheaper to add chlorine gas rather than hypochlorite itself. (In a swimming pool, though, you have to keep adding bases—sodium carbonate, or "soda ash," is cheapest—to keep the acidity under control. Otherwise the  $\text{HCl}$  keeps increasing and increasing, and the swimmers complain. I had a summer job many years ago as the maintenance person for a city pool, where I got very familiar with corrosiveness of this system—and also with swimmers' complaints.)

So we'll have rivers, lakes, even oceans of a dilute acid and bleach solution. If the air contains, say, 1% chlorine, the acidity of surface water will be about like that of undiluted vinegar. As with the  $\text{H}_2\text{SO}_4$  world I described last month, chemical weathering will be ferocious! Minerals will consist of lots of clays and quartz, and not much else. Rocks made of carbonates—limestone—won't exist at all, because over geologic time all the carbonate will be fizzed back into carbon dioxide by the acidic surface water. (Which could be a problem for the planet; if it happens too fast, the world could end up baked in a heavy blanket of  $\text{CO}_2$  like Venus. For the world to survive, then, either there must be few carbonate rocks to start with, or else their dissolution must happen slowly enough that the carbon can be cycled into a safer form, such as organic matter.)

What about biochemistry? Again we start with basically an Earthlike

system, and add lots of chlorine tolerance. But that's a tall order: Earth-like living cells can't tolerate  $\text{Cl}_2$  at all. Those reactive  $\text{Cl}$  atoms, made by photodissociation, are very good at glomming onto Earth-type biomolecules. So either the biochemistry will have to be very different, or else the shielding at the cellular level will have to be very good indeed. The latter possibility is not so unlikely as it may seem: Oxygen itself is highly toxic to the cell nuclei of terrestrial organisms, so that oxygen-breathing creatures like ourselves need elaborate mechanisms to protect the nuclei from the air.

Chlorine also reacts with lots of terrestrial-type organic compounds. It combines with hydrocarbons to make  $\text{HCl}$ , leaving a carbon residue, for example. So the organic molecules that do exist will be heavily chlorinated. Things like wood, for example, instead of being simply cellulose, will be like natural plastics. Tree trunks might be made of something like PVC (polyvinyl chloride, the white plastic used to make irrigation pipe). Shells, bones, and teeth would be made out of something similar; they couldn't be made out of minerals like calcium carbonate or calcium phosphate, since they'd dissolve!

Plant photosynthesis would overall be about the same, in that its primary function would be to make oxygen (not chlorine!). But again the details will be very different. For one thing, the leaves must be black, since green light is about only thing that will come through the atmosphere! The leaves probably would have a "plasticity" look to terrestrial eyes, too; maybe they'd look like sun-rotted Hefy bags.

And the equivalents of flower perfumes, decay odors, the whole panoply of organic compounds put off by a living ecosystem: they would fit right into a toxic waste dump on Earth. PCBs, perfumes made of things like chlordane and DDT: all perfectly natural, and all, of course, perfectly nontoxic to the native life forms, which after all evolved with them and are tolerant to them.

As I've implied, too, there's no reason intelligence couldn't arise on

a chloroxygen world. Oxygen metabolism, with or without chlorine, is high-energy and can support the overhead of a large multicelled organism—and of intelligence. But the sheer corrosiveness of the environment would also forestall technological development. Metals wouldn't last long enough, even if you could smelt them in the first place. (Aside from the precious metals like gold or platinum, which are rare and not very strong.)

In addition, fires would just smolder, because chlorine atoms inhibit flame. So even fired ceramics wouldn't exist. Technology would thus be stalled out at the wood-and-stone level, even though by Earthly standards, the local "wood" would be a high-grade plastic.

Just as with the sulfuric-acid world I described last month, it's another way to get stuck in the Stone Age by the vagaries of the local chemistry.

It'd be an interesting, but dangerous, place to visit, too. Although a human could probably walk around with a rubber suit and a special gas mask to strain out the chlorine, he'd die without such protection—very slowly, for there'd be enough oxygen in the air to drag the process out.

And we'd have to be very careful of biocontamination. Suppose a simple, chloride-fixing microbe from a chloroxygen world accidentally got introduced to a planet like the Earth. If it were simple enough, this microbe would find Earth's environment bland but not hostile. After all, the bug is used to an oxygen-bearing atmosphere; indeed, it probably needs free oxygen. Worse yet, it may find an Earthlike environment a paradise! There's water, oxygen, organic matter—and an awful lot of chloride that nobody wants just lying around.

The rabbits in Australia were subjected to more natural population checks. And as the microbes multiply exponentially, they dump tons of homegrown chlorinated compounds into the terrestrial-type biosphere. . . .

A worse scenario than the *Andromeda Strain*, for it leads to infection of the entire biosphere! ♦

# About the Authors

Among the infinity of alternate universes, there are quite a few in which **Jefferson P. Swycaffer** never wrote "The Ultimate Anthropic Principle," and others in which he did submit the story to this magazine, but the editor decided to turn it down. Fortunately for Jeff, and this magazine, and all of you, we're in a universe in which this remarkable story ended up being the lead fiction offering in this issue.

This is Jeff's first appearance in a professional SF magazine, even though he has been selling fiction for 14 years, dating back to his first sale in 1979, a short story titled "At the Sign of the Brass Breast" that showed up in the *Swords Against Darkness IV* anthology. Since then he has sold nine novels, most recently *Warsprite* and *Web of Futures*, which were published by TSR in 1990 and 1991.

**Brian Stableford** says that he wrote "The Flowers of the Forest" to develop one idea and offer a new viewpoint about another one. If spacefaring people were bioengineered to exist without legs, "such folk would have to grow temporary legs in order to make planetfall, and this would become associated with the idea of 'returning to their roots,'" Brian explains. "Also, carnivorous trees had always had a frightfully bad press, although they'd probably be quite mild-mannered really. . . ."

"Flowers" is Brian's third story for us in recent issues, preceded by "Complications" (February 1992) and "Skin Deep" (October 1991).

"Out of Their Element" is the second published story from the team of **Geoffrey Landis** and **Jori Strumolo**, and marks Jori's debut as a contributor to this magazine. Geoff, who won the 1990 Nebula Award and the 1992 Hugo Award for Best Short Story, has been in AMAZING® Stories once before, with a piece called "The River of Air, the Ocean of Sky" (July 1988).

Only someone like **Paul Di Filippo** could explain "Afterschool Special"

as an exercise in extrapolation from present-day reality. Paul says this story is "the latest entry in my ribofunk series, growing evidence and support for which can be seen in the daily headlines." Paul's last story for us was "Mama Told Me Not to Come" (January 1993), and his earlier "Lennon Spex" (July 1992) made the final ballot for this year's Nebula Awards; as this is written, we're about two weeks away from finding out whether it's a winner.

With "Vapors," **Jack Dann** establishes even more firmly that he's one of the most versatile writers around. This haunting piece of medieval dark fantasy is adapted from his forthcoming historical novel about Leonardo da Vinci, titled *The Path of Remembrance*. Jack's other recent appearances were with the hard SF novella "Thunder-Being," which concluded last month, and the contemporary magic-realism tale "Life in the Air," which was published in our April 1992 issue.

If **Andrew Scott Archer** has his way, "Tipi Ganoo and Tyler II" will prove to be only (ahem) the tip of the iceberg: "I believe the world could use a whole lot more funny fantasy right now," he says. "Especially mine." This story is his first piece of published fiction, but now that he has left the mundane world in favor of a full-time career as a writer of SF and fantasy, don't be surprised if you see his name popping up in lots of other places before too much longer.

In contrast, **George Zebrowski** has been a full-time wordsmith for more than two decades, and readers of this magazine have seen many of the fruits of his recent labors in the last couple of years. "Behind the Stars," a two-part serial beginning in this issue, explores the possibilities of a unique sort of first contact, as seen through the eyes of the young people whose lives are forever changed by what they discover. ♦

# Tomorrow's Books

## July 1993 Releases

Compiled by Susan C. Stone  
and Bill Fawcett

**Poul Anderson: *The Byworlder***  
Baen SF, pb reiss, 224 pp, \$3.99. The first alien starship had arrived three years ago, and still its occupant refused to establish contact. One itinerant artist, working his way up through the byworld subculture, thought he knew why—but to test his theory he would need powerful help.

**Poul Anderson: *The Dancer From Atlantis*** Tor SF, pb reiss, 192 pp, \$3.99. In this classic time-travel story, an accident in time snatches a modern American architect, a medieval Russian trader, a barbaric Hun, and a beautiful dancer from lost Atlantis, and transports them all to ancient Egypt.

**Poul Anderson: *Operation Chaos***  
Baen Fantasy, pb reiss, 288 pp, \$3.99. On a world where magic works, a werewolf and a witch battle all the powers of Hell to save their child.

**Piers Anthony & Robert Kornwise: *Through the Ice*** Baen Fantasy, pb reiss, 304 pp, \$5.99. Author tie-in reissue fantasy quest about a man who falls through the ice into another, magical Earth.

**Piers Anthony & Mercedes Lackey: *If I Pay Thee Not In Gold*** Baen Fantasy, hc, 416 pp, \$20.00. The first book of a new fantasy series about a magical world where women rule through magic, and where one woman discovers that

gender and magical power are not the only meaningful measures of a person or a society.

**Will Baker: *Shadow Hunter*** Pocket Books SF, hc, 384 pp, \$21.00. In 2131, following a nuclear war, nothing lives in the Wastelands except the Ginks—the offspring of chimps and humans—and the wild animals they command. The animals, ready for war and in danger of destruction, wait only for their promised savior to lead them to victory.

**Robert Bloch: *Once Around the Bloch: An Unauthorized Autobiography*** Tor Nonfiction, hc, 416 pp, \$22.95. An autobiography of horror writer Robert Bloch, creator of *Psycho* and other cinematic and literary terrors.

**Ben Bova: *Mars*** Bantam SF, 1st time in pb, 528 pp, \$5.99. An epic story of the struggle for discovery and survival on the first manned mission to Mars, by the six-time Hugo Award winner.

**Edited by Marion Zimmer Bradley: *Towers of Darkover*** DAW Fantasy, pb orig, 336 pp, \$4.99. Twenty all-original stories exploring the Towers of Darkover, where those gifted with *laran* join together to work with powers beyond an ordinary mortal's imagining.

**Marion Zimmer Bradley with the Friends of Darkover: *Free Amazons of Darkover*** DAW Fantasy, pb reiss, \$3.95. Tie-in reissue of an anthology of eighteen Free Amazon stories.

**Marion Zimmer Bradley with the Friends of Darkover: *The Other Side of the Mirror*** DAW Fantasy, pb reiss,

pb reiss: paperback reissue, designating a title that was previously published in paperback but has been out of print.

pb rep: paperback reprint, designating a title that was previously published

\$3.50. Tie-in reissue of a Darkover anthology set when Terra has rediscovered its long-lost colony.

**Marion Zimmer Bradley with the Friends of Darkover: *Four Moons of Darkover*** DAW Fantasy, pb reiss, \$4.99. Tie-in reissue of this anthology of stories set during the rare conjunction of the four moons of Darkover.

**Marion Zimmer Bradley with the Friends of Darkover: *The Keeper's Price*** DAW Fantasy, pb reiss, \$3.95. Tie-in reissue of the first anthology of Darkover stories.

**Steven Brust & Megan Lindholm: *The Gypsy*** Tor Fantasy, 1st time in pb, 288 pp, \$4.99. A combination contemporary fantasy and police procedural about a gypsy with a mysterious quest to fulfill, a seasoned cop who keeps finding dead bodies in the gypsy's wake, and their common enemy, the Fair Lady, Queen of the Underworld.

**Douglas W. Clark: *Whirlwind Alchemy*** AvoNova Fantasy, pb orig, 320 pp, \$4.99. In this third funny fantasy, Corwyn and his enchanted broom are off to Spain to find the author of the scandalous biography that has made him a laughingstock in his home town, leaving the town's safety in the hands of his inept apprentice Sebastian.

**Arthur C. Clarke: *The Hammer of God*** Bantam Spectra SF, hc, 240 pp, \$19.95. In Arthur C. Clarke's first solo SF novel in years, the year is 2110, and an amateur astronomer discovers a large asteroid hurtling toward Earth from deep

in hardcover or trade paperback (sometimes expressed as **1st time in pb**)

tr pb: trade paperback, a format using pages larger than a paperback but generally smaller than a hardcover, with a flexible cover.





space. Humanity faces the fate of the dinosaurs, if the captain and crew of the spaceship *Goliath* cannot divert the asteroid from its course.

**Adrian Cole: *Star Requiem 4: Labyrinth of Worlds*** AvoNova Fantasy, pb orig, 352 pp, \$4.99. In this conclusion of the *Star Requiem* series, the armies of the alien Csendook have discovered the hidden sanctuary of their human prey and the master of Man's last citadel seeks to harness the elemental powers of the planet called Mother of Storms.

**Peter David: *Star Trek The Next Generation: Imzadi*** Pocket Books SF, 1st time in pb, 352 pp, \$5.99. A book that explores the past and future relationship between Riker and Troi—and confronts them with a choice between their duty to Star Fleet and to each other.

**Gordon R. Dickson: *The Space Swimmers*** Tor SF, pb reiss, 256 pp, \$2.95. The Space Swimmers tempted humanity to venture into space. When treachery split the human race into Sea-Born and Land-Born, and only the Sea-Born could communicate with the glorious Space Swimmers, the jealous Land-Born began to hunt and slaughter the Sea-Born like animals.

**Stephen R. Donaldson, editor: *Strange Dreams*** Bantam Spectra Fantasy, tr pb orig, 544 pp, \$14.95. An anthology of fantasy short stories by Greg Bear, Orson Scott Card, Franz Kafka, Robin McKinley, Theodore Sturgeon, Sheri S. Tepper, and others.

**L. Warren Douglas: *Bright Islands in a Dark Sea*** Del Rey Discovery SF, pb orig, \$4.50. Yan Bando was quietly pursuing knowledge about the era, two thousand years ago, when the alien ferrosin visited and became masters of Earth. He never meant to discover the secret the church militia would kill to

protect—that Earth's alien visitors had never really left. . . .

**Gardner Dozois, editor: *The Year's Best Science Fiction: Tenth Annual Collection*** St. Martin's Press, SF simultaneous hc/tr pb orig, 624 pp, \$27.95 hc/ \$16.95 tr pb. An anthology of novels and short stories selected by the editor of *Asimov's Science Fiction Magazine*, along with his annual summary of the year in SF and his recommended reading list.

**David Drake: *Car Warriors #1: The Square Deal*** Tor SF, pb reiss, 224 pp, \$4.99. The first novel set in the world of the popular *Car Wars* game by Steve Jackson Games. Formerly available in trade paperback.

**David Eddings: *Domes of Fire*** Del Rey Fantasy, 1st time in pb, \$5.99. Book One of The Tamuli (sequel series to The Elenium). In far-off Tamul, dark hordes are destroying the empire, and Sparhawk must help before his own kingdom of Elenia is besieged.

**Rutledge Etheridge: *Legend of the Duellist*** Ace SF, pb orig, 256 pp, \$4.50. Rough and tumble space opera. After centuries of peaceful exploration, war seemed obsolete. And when aliens declare war on humanity, the Duellists, highly trained human combat artists who serve as peacekeepers and bounty hunters, are the only fighters left.

**Alan Dean Foster: *Star Trek Log Four, Log Five, Log Six*** Del Rey SF, pb reiss, \$5.99. Omnibus of edition volumes 4, 5, and 6 of the series adapted from the *Star Trek* animated series.

**Thorarinn Gunnarsson: *Dragons' Domain*** Ace Fantasy, pb orig, 272 pp, \$4.99. In the wild forests of Norway, the last of the ancient and magical race of dragons has survived. And only a human can help the dragons win their fight for survival.

**Ellen Guon: *Bedlam Boyz*** Baen Fantasy, pb orig, 304 pp, \$4.99. Prequel to *Knight of Ghosts and Shadows*, and *Summoned to Tourney*. In this urban fantasy, runaway Kayla finds her healing talent draws unwanted attention from the LA gangs, from an ancient power, from evil elves from another world—and from one human woman who just might be her salvation.

**Jack C. Haldeman II & Jack Dann: *High Steel*** Tor SF, hc, 256 pp, \$18.95. Drafted from the Mohawk reservation on Earth to take part in the greatest construction project of all time, John Stranger struggles to maintain the ancient Way of his people while working in orbit high above Earth.

**The Harvard Lampoon: *Bored of the Rings*** Roc Fantasy satire, 1st tr pb edition, 176 pp, \$8.00. This parody of Tolkien's *Lord of the Rings* series is finally back in print just in time for the 51st anniversary of the series.

**Simon Hawke: *The Wizard of Camelot*** Warner Questar Fantasy, pb orig, 224 pp, \$4.99. In this seventh book in the Wizard series, we learn how the events of the series began—how Merlin returned to lead the ravaged near-future world out of the second dark age by bringing back magic.

**Robert E. Howard, L. Sprague de Camp and Lin Carter: *Conan of Cimmeria #2*** Ace Fantasy, pb reiss, 192 pp, \$4.50. In the second volume in this classic series, Conan is attacked by the crew of the ship he is traveling on, and only his savage fury and lightning reflexes can carry him to victory against impossible odds.

**Andrew Keith: *Battletech: Blood of Heroes*** Roc/FASA SF, pb orig, 288 pp, \$4.99. This novel, set in the world of the popular *Battletech* futuristic role-playing game, features a rebellion against the





Federal Commonwealth, and a rebel attempt to seize the planet Glengary, home of the Gray Death Legion.

**J. Robert King: *Carnival of Fear*** TSR Fantasy/Horror, pb orig, 336 pp, \$4.95. A murder has occurred along the sidewalk boardwalk of Carnival l'Morai, and three carnival performers become marked for death when they begin to track down the killer. Book Six in the series of RAVENLOFT™ novels.

**Penelope Banka Kreps: *Carnivores*** Zebra Horror, pb orig, 352 pp, \$4.50. A slight shift in the Earth's axis has turned back the genetic clock millions of years and now prehistoric predators are stalking the Florida Everglades, hunting human prey.

**Michael P. Kube-McDowell: *Exile*** Ace SF, 1st time in pb, 304 pp, \$4.99. When the starship came, Meer Faschen fought against the city-state that destroyed the ship and silenced or exiled his fellow rebels. Now, twenty years later, he must enter the world of the exiles, and hear their forbidden memories.

**Katherine Kurtz & Deborah Turner Harris: *The Adept: The Templar Treasure*** Ace Fantasy, pb orig, 320 pp, \$4.99. In his third adventure, adept and historian Sir Adam Sinclair must search for the Seal of Solomon, an ancient artifact that can bind or unleash demons, which has been stolen by dark forces.

**Katherine Kurtz & Scott MacMillan: *Knights of the Blood*** Roc Fantasy, pb orig, 352 pp, \$4.99. This first book of a new series puts a spin on vampire legends. An L.A. policeman's investigation of an unusual murder leads him back in time to Nazi Germany, and the Crusades, to uncover a secret order of vampires, and an order of vampiric knights—the Knights of the Blood—who oppose them.

**Mercedes Lackey: *Bardic Voices: The Lark and The Wren*** Baen Fantasy,

pb reiss, 496 pp, \$5.99. Author tie-in reissue. In this first book in the Bardic Voices series, Rune, the daughter of a tavern wench, tries to prove she has the talent to become one of the greatest bards of her world.

**Bentley Little: *The Summoning*** Zebra Horror, pb orig, 544 pp, \$4.50. When a serial killer stalks a dusty Arizona town, no one wants to believe that the killer is not some unknown psychopath, but rather an ancient Chinese vampirelike monster who thrives upon terror and blood.

**Anne Logston: *Greendaughter*** Ace Fantasy, pb orig, 224 pp, \$4.50. To save her world, the young elf Chyrie must join forces with the hated humans to forge an alliance between her race and theirs against the barbarian invaders who threaten them both.

**Julian May: *Blood Trillium*** Bantam Fantasy, 1st time in pb, 432 pp, \$5.99. Julian May returns to the world she co-created with Andre Norton and Marion Zimmer Bradley for the novel *Black Trillium*. Twelve years after the events of *Black Trillium*, a sorcerer has escaped from his exile bearing a magical object that can unbind the princesses' three talismans of the Sceptre, and already the sacred Black Trilliums contained within the sisters' amulets have changed to the color of blood.

**Anne McCaffrey & Elizabeth Ann Scarborough: *Powers That Be*** Del Rey/Ballantine SF, hc, 320 pp, \$20.00. A collaborative novel about Yana Maddock, a recently medically retired military hero who has been sent to spy on the locals on an arctic world where some strange things have been happening—things Yana comes to believe are worth fighting for, dying for . . . and living for.

**Anne McCaffrey & Elizabeth Moon: *Sassinak*** Baen SF, pb reiss, 352 pp,

\$5.99. Author tie-in reissue of Elizabeth Moon's collaboration with Anne McCaffrey about a space pirate's captive who becomes the pirate's nemesis.

**Elizabeth Moon: *Hunting Party*** Baen SF, pb orig, 400 pp, \$5.99. A space adventure novel. When Heris Serrano is forced to resign her commission, she signs on as "Captain" of an interstellar luxury yacht—and finds herself fighting for her life against a varied and villainous bunch of cutthroats and smugglers.

**Elizabeth Moon: *The Deed of Pak-senarion*** Baen Fantasy, tr pb reiss, 1040 pp, \$15.00. Three-in-one volume trade paperback of the Pak-senarion trilogy: *Sheepfarmer's Daughter*, *Divided Allegiance*, and *Oath of Gold*.

**Elizabeth Moon: *Liar's Oath*** Baen Fantasy, pb reiss, 480 pp, \$5.99. Tie-in reissue of a fantasy quest novel set in the world of *The Deed of Pak-senarion*.

**Dan Parkinson: *Hammer and Axe*** TSR Fantasy, pb orig, 320 pp, \$4.95. Volume Two of the DRAGONLANCE® Dwarven Nations Trilogy. The humans of Ergoth continue to encroach upon Thorbardin, but the worst threat to the dwarven fortress comes from a mysterious fog-beast and a covetous wizard.

**Richard Pini, editor: *Dark Hours: The Blood of Ten Chiefs, Volume 5*** Tor Fantasy, tr pb orig, 320 pp, \$7.99. An anthology set in the Elquest universe, with stories by Lynn Abbey, Esther Friesner, Mercedes Lackey, Diana L. Paxson, Nancy Springer, and others.

**Frederik Pohl: *Mining the Oort*** Del Rey SF, 1st time in pb, \$4.99. A young Martian colonist has one chance to preserve his home, but to save Mars it seems Earth must die.

**Mike Resnick & Martin Harry Greenberg, editors: *Dinosaur Fantastic*** DAW Fantasy, pb orig, 288 pp, \$4.99. An anthology of 25 short stories



about the most terrifying creatures ever to inhabit the Earth. Stories by Pat Cadigan, Mercedes Lackey, Kristine Kathryn Rusch, Robert Shekley, and more.

**Kenneth Robeson: *Doc Savage: The Whistling Wraith*** Bantam Spectra SF, pb orig, 304 pp, \$4.99. For the 60th anniversary of Doc Savage publishing, the Man of Bronze begins a new series of adventures.

**Michael Scott Rohan: *The Gates of Noon*** Avon/Morrow Fantasy, hc, 448 pp, \$22.00. Sequel to *Chase the Morning*. Years after his last adventure, Steve Fisher is forced to reenter the alternate reality of the Spiral and confront gods of ancient faiths, armies of the undead, and his own great lost love.

**Michaela Roessner: *Vanishing Point*** Tor SF, hc, 384 pp, \$21.95. One night, one tenth of the human race awoke to discover that the rest of the human race had vanished without a trace.

**Melissa Scott: *Dreamships*** Tor SF, 1st time in pb, 352 pp, \$4.99. A free-lance space pilot and her crew are hired to track down a rich corporate owner's crazy brother—who may have just created the first sentient Artificial Intelligence.

**John E. Stith: *Manhattan Transfer*** Tor SF, hc, 384 pp, \$21.95. A hard SF novel in which aliens steal Manhattan and take it with them as the ultimate souvenir.

**S. Andrew Swann: *Forests of the Night*** DAW SF, pb orig, 256 pp, \$3.99. In this near-future, urban SF thriller No-har Rajasthan, a private eye who's a genetically engineered blend of human and tiger, takes on a human murder investigation—and a lot of new enemies.

**Howard Waldrop: *Night of the Cooters*** Ace SF, pb reiss, 272 pp, \$4.99. This collection of short stories by the Nebula award-winning writer is a

volume of bizarre and fascinating voyages of the imagination.

**Lawrence Watt-Evans & Esther Friesner: *Spilt Heirs*** Tor Fantasy, hc, 320 pp, \$18.95. A funny fantasy saga about war, wizardry, a confused dragon, and hopeless dynastic confusion in a magical kingdom, by two masters of the field of humorous fantasy.

**Lawrence Watt-Evans: *The Spell of the Black Dagger*** Del Rey Fantasy, pb orig, \$4.99. An Ethshar novel. Tabaea was just another petty thief, until she broke into the home of a wizard and stole a spell to create a magical dagger that could make her invincible.

**Margaret Weis: *Ghost Legion*** Bantam Spectra SF, pb orig, 496 pp, \$4.50. In the first stand-alone novel in the Star of the Guardians series, the uneasy peace of the galaxy ruled by young Dion Starfire is threatened by an illegitimate son of the dead king, and his army of "ghosts"—alien presences that can roam the galaxy and kill at will.

**Martha Wells: *The Element of Fire*** Tor Fantasy, hc, 416 pp, \$22.95. The story of a magical kingdom endangered by a weak king, where high-tech wizardry meets fairy magic . . . and deadly court intrigue is the rule of the day.

**Gene Wolfe: *Pandora by Holly Hollander*** Orb Fantasy, 1st time in tr pb, 208 pp, \$8.95. The first paperback edition of this classic contemporary fantasy about a teenager who discovers an old, heavy, locked box with the name Pandora on the lid. Curious about the contents, Holly opens the box, unleashing death and a devious puzzle only she can solve.

**Bridget Wood: *The Lost Prince*** Del Rey Fantasy, tr pb orig, \$10.00. Sequel to *Wolfing*. As fell magics of Medoc's Dark Ireland spread across all the fair land of the Wolfline, High Queen

Grainne prepares to drive the usurper from her throne.

**T. Lucien Wright: *Dark Visions*** Pinnacle Horror, pb orig, 320 pp, \$4.50. A young woman who can see the future is haunted by the terrifying, unearthly vision of The Tunnel, afraid that in this dark place something unspeakably evil waits for her—and everything she fears, and more, is real.

**William F. Wu: *Isaac Asimov's Robots in Time: Marauder*** Avon/Morrow SF, pb orig, 272 pp, \$4.99. Sequel to *Predator*. An experimental robot named Hunter travels through time to search among pirates for the missing MC Governor robot Marauder.

*Publishers of science fiction, fantasy, horror, and related books are invited to contribute material to this monthly listing. For more information, contact Bill Fawcett & Associates, 388 Hickory Road, Lake Zurich IL 60047.*

Looking Forward:

# Knights of the Blood

Katherine Kurtz and Scott MacMillan

Coming in July 1993 from Roc Books

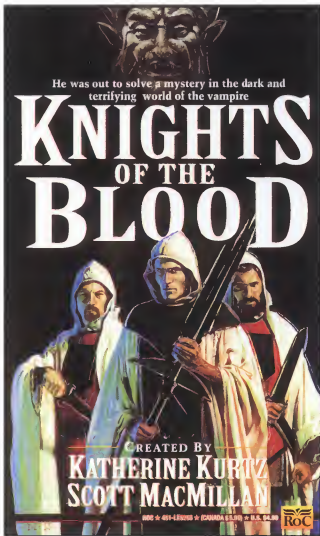
*Introduction by Bill Fawcett*

This novel is a one-of-a-kind mixture of vampires, modern police techniques, and contemporary Nazi plots. Working from a background created by Katherine Kurtz and first used in her novel *Lammis Night*, Scott MacMillan (who is Ms. Kurtz's husband) has used his own personal background to create a tale that takes the reader back through time as a Los Angeles policeman solves a 700-year-old mystery..

Scott is himself a former Los Angeles policeman, a former editor of western and gun magazines, a World War II historian, and a specialty auto dealer. He and Ms. Kurtz bring all of their experience to bear in this fast-moving novel.

The excerpt that follows is from near the beginning of the story, and serves as an introduction to the villain as well as an illustration of how one modern group of vampires got started.

Kluge and his men pushed cautiously against the small postern door set into the gates of the castle, and were rewarded for their efforts as the door swung silently open. Easing through



Cover art by Michael Herring

the small opening, alert for any movement within, they found themselves in a large, silent courtyard opposite the main tower of the castle. Built out from the walls of the castle were a number of buildings that lined the courtyard and provided stabling, a smithy, kitchen, and chapel for the knights. Kulge and Baumann took it all in a glance, and without a word being spoken, led their men along the easternmost wall of the castle, staying well hidden in the deep shadows as they approached the tower.

Inside the castle, de Beq turned his attention to the three SS medics identified by the priest as the enemy. He had tried to speak with them in German, but it was obvious that they couldn't understand him. He was trying to decide on a different tack when one of them stepped forward, snapped to attention, and with a click of his heels gave de Beq a smart, stiff-armed salute.

Somewhat taken aback by the soldier's actions, de Beq was even further surprised when the man stepped forward and raised the left arm of the corpse and pointed to the tattoo on the inside of the bicep. Then, pulling off his own tunic and shirt, he showed his own tattoo to de Beq.

It was obvious that both men wore the twin lightning flashes on the inside of their left arm. Just what that was supposed to mean, however, was lost on de Beq. He turned to William of Etton, who had been quietly sizing up their captives, and asked for his opinion.

"Well," said William, "I suppose that the men in the black uniforms all belong to the same order. They must all swear an oath to be branded, so they can tell their dead if they are stripped by the enemy. This other one—well, he's certainly not one of them"—he inched his head toward the SS men—"and since he wasn't armed when we caught him, I suppose he *might* be a priest."

"Well, there's one way to find out," said de Beq.

"How?" asked William.

"Priest," de Beq spoke slowly in Latin, "I want you to offer Mass for us."

"Henri, do you know what you are saying?" William whispered, eyes wide, as several of the other knights also exchanged apprehensive glances. "If we are damned for our transgression—"

"If we are damned, then it is long past time we perished," de Beq said softly. "But I tell you, William, that to endure more than six hundred years without the sacrament of our Lord is long enough. Whether it heals or condemns, I am prepared to place the matter in His hands. Do you agree, *mes confrères*?" he finished, glancing also at the others.

At their low-voiced murmurs of agreement, de Beq turned back to Freise.

"Well, Father, do you agree?"

Freise had not been able to follow the urgent murmurings among his captors—he thought they might be speaking French, but he knew only a few words of that language—but the request for a Mass seemed relatively clear, if a trifle oddly timed, under the circumstances.

"You wish me to say Mass?" he said in halting Latin.

"Yes, the Mass," the head knight replied. "*Corpus et Sanguis, Hostiam et Calix*—both, together."

Freise nodded. They wanted it under both species, then—host and cup. The request was unusual, other than in a religious community—but maybe they *were* a religious community. The white robes suggested it—though Freise had never heard of an order like *this* before. . . .

"We will go to the chapel, then," de Beq said. "Pageau, bring some bread and wine."

Kluge and his men were deep in the shadows of the stable when the knights and their prisoners started down the wooden stairs outside the tower. Holding back to watch, the Germans saw their comrades and the American priest marched at swordpoint across the courtyard and into the chapel.

As Kluge and his men were about to dash across the courtyard to the chapel, more than a dozen more white-robed figures began to emerge from the castle and also went into the chapel. Kluge and Baumann waited until the last of them had entered the building—and then another five minutes, to be sure of stragglers—then dashed across the courtyard with their men. The door to the chapel was closed but not latched, and yielded soundlessly to Kluge's slow pressure.

Inside, the long chapel was illuminated only by a few votive candles at the sides and a blaze of altar candles on the reredos behind the altar. The five SS men crept silently into the vestibule beyond and eased the door closed once more, then Kluge signaled his men to work their way closer on their bellies, guns at the ready. He could see the American priest up at the altar, reading from a G.I. issue missal held by one of the white-robed men, but the rest were kneeling with their backs to the door, in a ragged semi-circle in front of the altar, their attention obviously focused on the priest.

The three SS captives sat tensely in seats carved out of the wall at the right of the altar, guarded by three knights who leaned on their naked swords, watching their captives as closely as they watched the priest. Kluge counted about two dozen of the men in all, but they were occupied for now. It gave Kluge time to consider all his options—for a single glance around the chapel had given him the answer to the question that had been gnawing at his subconscious ever since he first saw the cross and swastikas carved above the gates. He was in the castle of the Order of the Sword.

As he crouched in the darkness, Kluge tried to piece together what little he knew of the Order of the Sword. He recalled them having been a crusading order of knights, bodyguards to the Prince of Galilee . . . but there was something else, something sinister, that he tried desperately to recall.

At the altar, the Mass was approaching its climax. Reverently, Father Freise held up a small loaf of bread, carefully pronouncing the words of consecration.

"*Hoc est enim Corpus meum.*"

Kluge found himself watching avidly as the priest put

the loaf down, genuflected, then held the loaf aloft for the men to see. There was something, just at the edge of memory. . . .

The priest continued in Latin, setting down the loaf, genuflecting again, and picking up the chalice. This he gazed upon with equal reverence, again speaking the words of consecration.

*"Hic est enim Calix sanguinis mei. . . ."*

*Calix sanguinis mei, the cup of my blood—blood.*

Suddenly Kluge knew why the castle wasn't on his map. The Order of the Sword had been declared anathema by the Pope at about the same time that the Templars had been suppressed in France. Unlike the Templars, there was no accusation of heresy. No, the charge against the Order of the Sword was far greater. They had been accused of being vampires.

As the priest elevated the chalice—now containing the Blood of Christ, if the Christian faith were true—Kluge stared at the gray-haired knight kneeling closest to the altar, perhaps the leader of this strange, white-clad band. Carefully, he took in every detail of the man—the chain mail showing under robe and mantle, the hand-and-a-half sword belted around his waist.

The full realization of what he was witnessing flooded over Kluge, crashing on him like a crimson wave. In an instant, he realized that the knights waiting to receive communion were centuries old. The pale luminance of their skins, the rapturous expressions on their faces as the priest lifted the loaf in one hand and the chalice in the other—all confirmed the darkest of the legends surrounding the Order of the Sword.

Himmler had modeled the blood rituals of the SS on those alleged to have been practiced by the Order of the Sword, and Kluge realized with a chill of elation that having been initiated into the bloody rites of the SS, he was in communion with the knights now kneeling in the chapel—knights with the blood of vampires in their veins, knights who would live forever!

Kluge took another look around the chapel, its walls painted in the style of most medieval churches. But unlike other churches, the murals on the walls of the chapel were not decorated with religious scenes, but instead covered with a continuous painting depicting the history of the Order of the Sword. Quickly Kluge scanned the stylized figures of the knights and horses, following their exploits around the room until, in the north, he came to a large triptych depicting the battle at Calice Well.

The first panel showed the knights fighting with the

Turks in the chapel, as a radiant Christ crucified looked on. In the next panel, the knights had pinned one of the Turks to the wall with heavy spears. Blood was gushing from another spear wound in his side, almost in parody of the crucified Christ, and the knights were drinking the Turk's blood from cups offered to them by their leader. The figure of Christ on the cross now had an anguished look on his face, as though He were suffering far greater agonies than the Turk whose blood was being consumed.

The last panel showed the knights moving through the darkness, leaving the chapel. The crucifix was still there, only now Christ had turned His head away from the knights, and His face was not visible.

So, The Knights of the Sword had committed sacrilege, and been cursed by their God, and had retreated here to their castle in Luxembourg to make amends. But meanwhile, they were vampires!

Vampires! The thought of their total power electrified Kluge. It did not take a genius to see that Germany was losing the war, and yet here was a way in which some men could survive, and no matter what the outcome of the battle now raging in the forests around them, could rise out of the ashes of defeat and rebuild the Aryan race.

And now the vampires who could give Kluge this power were waiting to receive Christian communion. Kluge's theology, based on childhood catechisms mostly forgotten, was hazy; but if the words of consecration truly did transform ordinary wine into the Blood of Christ, he had to wonder what such blood would do to a vampire. Would it provide the same kind of nourishment as human blood? Or would it destroy them utterly for daring to profane so sacred a thing? If vampires were cursed of God, the Blood of Christ would surely destroy them the instant it touched their lips.

Kluge decided he did not want to wait to find out. The potential gift was too precious to risk losing it by the pious self-sacrifice of six-hundred-year-old knights who had decided it was time to pay the price for their sacrilege six centuries before. Even now, the young priest was dipping a fragment of the consecrated bread into the cup, touching it to the edge to stop its dripping, holding it a little above the cup as he looked into the ancient eyes of the leader of the knights.

*"Corpus et Sanguis Domini nostri Jesu Christi custodiat animam tuam in vitam aeternam. Amen,"* he said.

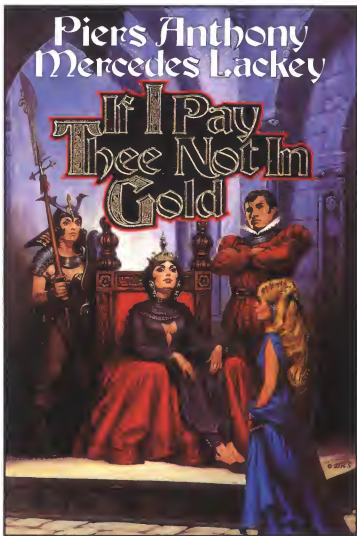
And as the vampire knight also murmured, "Amen," and extended his tongue to receive, Kluge and his men opened fire. ♦

Looking Forward:

# If I Pay Thee Not in Gold

by Piers Anthony and Mercedes Lackey

Coming in July 1993 from Baen Books



Cover art by Darrell Sweet

## Introduction by Bill Fawcett

In Mazonia, the women rule through magic and the men do what they're told. But everyone isn't sure that's how things should be. Xylina is even less sure after she is forced to use her magic to conquer Faro, the "most glorious male" she has ever seen. In this funny, occasionally risqué novel, two of today's most popular fantasists give us a long look at the war between the sexes and the ethics of desire.

In this excerpt from early in the book, Xylina makes a deal to take over ownership of a new house . . . and almost doesn't live to see her first sunrise in the place.

Antione nodded. "If you would be willing to trade your property for a third of the value of my little house," Antione said, "I think you could move in today."

Careful, Xylina warned herself. *Be careful. Don't act too quickly.* Yet she was excited; she wanted to jump up and shout her agreement. This was everything she had wanted, and more than she had dared hope for.

"I would like to see it first, of course," she said, as if a little reluctant.

"Well, of course!" Antione signaled to her slave, who brought her a wrought-iron key from a rack of many such keys on the side of his desk. "I'll take you there myself, this instant. I would like to put this all in motion as soon as possible, if you are in agreement."

Xylina hardly noticed the walk, so eager was she to see the house. She already wanted it, no matter how shabby

it was, for it certainly could not be poorer than the place where she lived now.

Antione led her to a wrought-iron gate in a high stone wall, a gate that had spikes built into the top to prevent anyone from climbing it. She opened the gate with a flourish, and Xylina and Faro followed her inside, finding them in the forecourt of the little house.

The forecourt was cool and lovely, shaded by two enormous trees, and paved with blue slate. The single door, built into the blank wall, led into the house proper.

The first room was the public or common room; it was furnished with two couches and two chairs, with small tables beside each. It was lit from a skylight, since no one would have any windows looking out on the gate and the street beyond. There was a small room off this common room that had been fitted up as an office. Then came the sleeping quarters, coming off a hall that led from the common room to the kitchen at the rear. It only had one real bedroom, with quarters for three slaves, or a combination of children and slaves. The kitchen and the bathing room were at the rear, and then came a door that led out into the rear court and the gardens there.

But it did have that lovely little forecourt that boasted a tiny fountain. The kitchen-garden in the rear court, although overgrown, had an apple tree and a fishpond.

The bathing room was a *real* bathing room with running water from the city aqueducts, a luxury Xylina had not enjoyed in years. This meant that if she wanted a real bath, with real water, she could have one—and Faro could bathe without her having to conjure a bath for him, if ever she was too busy to do so.

Xylina noted some defects in the place: the hypocaust, and the stove that heated its air, would need a thorough cleaning; the fishpond had been allowed to go dry and would need restocking.

But she was in love with the little place, and it didn't take much persuasion on Antione's part to get her to agree to the bargain.

They returned to her office, and the slave was sent to the Office of Records to obtain both deeds. After that, it was simply a matter of signatures, and it was done.

Faro had followed her everywhere, of course, and she had done her best to ignore his presence as Antione had ignored the presence of her own slaves. But once the gate was closed behind the two of them, Xylina dropped her pretense.

"Well?" she demanded, eagerly. "What do you think?"

He didn't answer immediately, but then, he never did. He had the habit of thinking over everything he was going to say before he said it, and she had gotten used to that. He examined the forecourt carefully, with the same attention he had given to her old home.

"On the whole—this was a good choice. There's only one thing I truly don't like."

"What is that?" she asked, puzzled.

"This place—it's not defensible," he replied, with a frown. "It's terribly open. There are no bars on the windows in the rear, and only the front gate locks. I can see no way to put a lock or a bar upon the front door with-

out making it look like the door to a prison. If I'm to guard you effectively, I will have to sleep in your chamber, across your threshold."

She dismissed that with a shrug. "I can't imagine who would want to break in here," she said. "It isn't as if we have any real valuables to steal. And what profit would there be in attacking me?"

He looked at her strangely, as if he could very readily think of a reason someone would want to attack her, but he didn't share it. "Very well then, little mistress," he said. "Would you like me to get your belongings, then go to the market for you?"

"Please," she said, gratefully. "I know you've said many times that you don't mind doing such a lowly task, but I feel I should keep thanking you. You really are above a task like that."

He smiled: one of his rare, slow smiles. "Think nothing of it, little mistress," he said. "After all, you are undertaking the lowly task of cooking."

"I don't mind," she replied earnestly. "I did it for myself and Marcus; I don't mind doing it for both of us."

But Faro frowned, as if he were determined that she should not have to cook much longer. "I am also going to see while I'm there if I can't find someone in need of a scribe—a freedman, perhaps. There is no sense in wasting time in getting employment for my skills. I am valuable, little mistress; I would be remiss if I did not begin to augment your income at once."

This man was incredible; he seemed to take more care of her than she did of herself. She smiled and shook her head. "You amaze me, Faro. Sometimes—sometimes I wonder how it is that our fates crossed. Whether it was really luck. You know, I wondered before I fell asleep last night if it was Marcus who somehow sent you to me."

"Sometimes I wonder myself, little mistress," he replied, in complete seriousness, "and the same thought occurred to me last night. Who knows? No one knows at all what is on the other side of death. Perhaps the dead can influence the living, or the fates of the living." And with those surprising words, he turned to go.

Then, just before he left her alone, he turned back. "Please lock the gate after me, little mistress," he said, and there was real worry darkening his eyes. "I would feel better."

"All right," she said. "If you insist."

She followed him to the gate and locked it after him. She watched until he was out of sight, then turned and surveyed her new home.

She wanted to sing or dance. She could hardly believe the way her life had turned.

But rather than celebrating, she had better get herself to work. She did not have the slaves another woman might have to clean this place. She must do as much of it as she could by herself, until Faro returned to help her.

The first and easiest thing was to scrub the walls and floors of the three rooms they would be using first: the kitchen, the bathing-room, and the mistress's bedroom.

This task would be the easiest, because she would be using conjured soap, sponges, and water. There would be no need to carry and mop up water, rinse sponges, or

deal with the same sloppy mess that a slave would need to. In place of mops, she would tie conjured sponges to the ends of sticks, with no worry about whether they wore out. It didn't matter; she could always conjure more.

It was amazing, the amount of filth that came pouring off the walls as she conjured soapy water to cover them and scrubbed with her impromptu mops. When she banished the water and soap, the dirt remained on the floor, in the form of dry dust, easy to sweep away. She dealt with the floors the same way, except that she swept most of the dirty water out the door before banishing it.

It was hard work, but no harder than she was used to. She thought wryly, as she scrubbed the walls and floors, putting good effort and muscle into the work, that such chores could serve as adjuncts to training. Certainly after a few days of this, her back, shoulders and arms would have had a thorough workout. Her efforts to clean her prior residence had improved her physical vigor; she had thought that to be an incidental benefit, until she started throwing rods in the arena.

But these activities were, of course, for men. Even though there were plenty of women too poor to afford more than one slave for chores, none of them would ever admit it. It was not fitting for a woman to perform menial chores, publicly. Xylina could not afford to be seen doing so, and therefore the courtyard would have to wait until Faro had time to deal with it. Dirt went out into the back gardens, where no eye would see her doing the work of a slave.

An amazing amount of time passed before she realized it. Faro had not returned by mid-afternoon, so she gleaned the last wild vegetables from the garden and made a kind of meal of them. While she ate, she gave thought to how best she could lease out Faro's services, for although her old home had paid for part of this new one, there was still a debt of real gold to be discharged, and at the moment Faro's size and skill were all she had to earn that gold.

The surest, quickest way to capitalize on their new—and probably short-lived—notoriety would be to trade on the obvious and the invisible. The obvious was Faro's size and strength; the invisible, his skills. There would probably be any number of women who would pay to see the hulking brute write a letter. It would, in fact, be a considerable novelty, like a talking horse.

At least it would for a while. Long enough, she hoped, to be able to buy seed for the garden, food for their meals, and to make small payments on her debt.

And then what?

Well, she might let him pursue that idea of hiring his services to the men of the quarter. Or—perhaps there might be more gold in novelty. Perhaps other, wealthier women would pay to have Faro discourse with them at parties and the like. Would he be willing to do recitations? She had no doubt he could memorize any kind of poetry or prose, and he was probably familiar with the works of some of the philosophers. The question was, would he be willing to play the role of the educated freak? This plan would need his cooperation; it would

come to nothing if he sat in a sullen silence and would not perform.

And speaking of performing—what of the theater? Could she, perhaps, put on some kind of extravaganza for paid ticket holders? Could she have him make a recitation while hoisting weights above his head or something of the sort? A silly idea, perhaps, but sillier ideas had succeeded in the past.

She finally tired by late afternoon, and banished the last of her cleaning conjurations. She wandered through the rooms of her house, admiring the work she had done, noting how much more still needed to be done. Her path brought her out eventually to the outer court and the gate.

She had not been paying a great deal of attention to anything other than the things she knew needed repairing, calculating how much could be done by Faro under her direction, and now much each repair would cost. The westerling sun cast long, dark shadows across the court; the overshadowing walls on either side made it very dark. She was considering conjuring lights for the evening when a hint of movement where there should not have been any made her freeze.

It was that which saved her life. She glanced down, and a rush of mingled fear and horror galvanized her, knotting her stomach and sending a thrill of cold up her spine. The adder, coiled and waiting almost at her feet, poised to strike, hesitated.

Xylina did not.

Reacting quickly, she conjured a waist-high plate of metal between her and the serpent. The adder struck at the same instant, and hit the metal plate.

Xylina pushed the plate over onto the snake in the moment when it lay stretched out and vulnerable. Then, powered by hysterical energy, she conjured another massive weight of material right on top of it, flattening the creature against the ground. This was definitely not the time to charitably abolish her conjurations.

She sat down abruptly on the broken masonry surrounding one of the half-dead trees, her energy leaving her. She gasped for breath, as if she had been running. Her knees were weak and her stomach had turned to water. She was grateful now for the setting sun, the heavy shadows in the courtyard, that hid her from anyone looking in.

Her mind was completely blank, and she simply sat where she was, shaking, until full dusk. Then she banished her conjurations, and stared at the flattened remains of the deadly adder.

There were no snakes in the city. Not even in the temple of the Oracle, whose symbol was a serpent. A small army of vermin-catcher slaves, accompanied by their terriers and ferrets, kept the city free of rats, snakes, and even helped keep the mouse population within bounds. There *were* no snakes in the city; there had been no snake-holes anywhere in the courtyard.

Someone must have brought it here and set it loose.

Someone wanted her dead.

But who? And almost as importantly, *why*? ♦



# Behind the Stars

## Part One

George Zebrowski

What calm composure will defend  
Your rock; when tides you've  
never seen  
Assault the sands of what-has-been  
And from your island's tallest tree  
You watch advance What-is-to be?  
The tidal wave devours the shore;  
There are no islands any more.

—Edna St. Vincent Millay

### 1

Max treasured the afternoons that he had always had to himself until dinner time; but the extra hour of school set aside for discussing his habitat's arrival in Earth's Sunspace had cut short the best part of his days, making him more resentful of going back, even though he had known all his life that the return was inevitable.

In less than three months, the once distant future would become a new present that would change his life forever, probably for the worse. Maybe something was really wrong with him, since all his classmates seemed to be looking forward to the great event, apparently unaware that anything was going to be taken from them. Was it his problem, or everyone else's? It was bad either way.

Elaine Jonney came into the



Illustration by Bob Eggleton

room. Max blacked his holoscreen and looked up as the display frame retracted into his desk. A middle-aged woman with short black hair, Tutor Jonney had soft brown eyes that gave her a friendly look, but she was a demanding teacher.

"With arrival now only three months away," she began, "all of us in the teaching unit are confident that we've been able to prepare you adequately for the return. We hope that our preparations of the last year will help make the return a rewarding experience for all of you."

Max couldn't imagine Elaine Jonney ever being anything but confident about anything, but he did not dislike her. Most of the time he could forget about her and listen to what she was teaching.

"I want to emphasize again," she continued, "that the tapes, films, and holos of Earth that you all grew up with cannot completely prepare you for the openness of a planet. The sky, oceans, deserts, rivers, mountains, canyons, and weather will be strange and wonderful, maybe even a bit distressing. Some of you might remember what the surface of a planet is like from our years of exploration in the Centauri system, but Earth is an inhabited world of cities and towns, with billions of people."

Max found that part of it hard to take—that there were so many people. He glanced around at his classmates. Lucinda ten Eyck always looked attentive when the return was being discussed, even when she was playing with her long red hair. Emil LeStrange, her chubby younger brother, nodded to himself from time to time. The Sanger twins, Jane and Alice, just smiled. Muhammad Bekhter seemed to have a questioning look on his light brown face. Max was determined not to reveal his own feelings until he understood them better, and maybe not even then.

He raised his hand as the tutor finished speaking.

"Yes, Max?"

"Will it really be that distressing?"

"The surface of a planet is very open. Having grown up inside the hollow of this habitat, you'll be getting used to living on the outside of a world, with only atmosphere above you."

"Is that all you meant?" Max asked.

"Even though the surface of a planet curves the other way," she continued, "it will seem flat and endless, and that might be disturbing."

Max had stepped into enough virtual holos to know that the land on Earth would not rise up and around, and that there would be a distant horizon, and experiencing these sensations had not bothered him then.

"Max?"

He nodded. "I guess that was it."

"Maybe Max has agoraphobia," Lucinda murmured. Max tensed. Emil shook back his long, sandy hair and chuckled, obviously enjoying his sister's comment.

"I'm sure he has nothing of the kind," Elaine Jonney said. "He's just naturally apprehensive and is willing to admit it. Fear of open places is very rare, but any kind of change can be disorienting at first."

Maybe that was all it was, Max thought, trying to stay calm.

Muhammad grinned at him. The twins stared at him as if he had suddenly become someone else. Lucinda crossed her long, bare legs. Her green eyes mocked him.

He looked back at the tutor. She seemed to be expecting him to respond.

"What is it, Max?" she asked finally.

"Nothing—I was just curious," he said uncomfortably, avoiding her eyes. Everyone was probably convinced that he had *something*. "Earth will be great," he said suddenly. "I can't wait to get there."

There was a long silence.

"Max, see me after school," Elaine Jonney said with a look of concern.

"Now, Max," Elaine Jonney said when the classroom was empty, "tell me what this is all about."

He looked into her eyes and wondered if he should say anything.

"I know it's not agoraphobia," she said.

"It's nothing."

"I know you better than that."

"Look, all I did was ask a question," Max said, "and Lucinda didn't miss her chance to get in a dig. It isn't as if it hasn't happened before."

"That's true, but you seemed more disturbed by it this time. Are you sure that—"

"Those two think they're better than everyone." That much was partly true. Emil and Lucinda were conceited, and he had never known them to be friendly to anyone. Sarcasm seemed to be their primary means of communication, from what he could tell. "Maybe," he continued, "it's just finally getting to me. I'm glad I won't have to put up with it much longer."

"Why do you think they act that way, Max?"

Max shrugged and sat back in his chair. "Maybe because their mother is Navigator."

Elaine Jonney sighed. "And that's all there is to this?"

Max hesitated, then said, "And you keep using words like distressing and disturbing at least twice a week."

"And that bothers you?"

Max nodded. "It's as if you expect us all to be bothered, no matter what you say."

"You're deliberately misunderstanding," she said with a look of exasperation. "Okay, Max, you can go."

Outside, in the great hollow of the habitat, Max ran along the path through the trees, and came to the waterfall on the asteroid core's inner equator. He lay down on the soft grass by the stream and felt the warmth of the distant sunplate on his face. The time until dinner had always been his to do with as he pleased, and he still had most of it, but he no longer felt the pleasure of escape.

He closed his eyes and put his hand into the cool water. After what seemed only a few minutes, his wrist ID timer beeped five o'clock. He opened his eyes, leaned over and sipped some water, then lay back and gazed at the countryside overhead. The inner carpet of the asteroid hollow swirled down into the bright sunplate two kilometers away at his left, and into the rocky area the

same distance to his right. He imagined that he felt his world turning, pressing him down into the grass, even though he knew that the only major sign of the voyaging habitat's spin was his feeling of weight.

"Hey, Max."

He looked up, annoyed at having his solitude disturbed. Muhammad walked toward him and squatted by the stream. "You really can't wait to get there, can you?" the dark-haired boy asked.

Max was puzzled at first, then remembered what he had said in class about how Earth would be great. "Sure," he replied. "Everybody is. Aren't you?"

"Well, yeah." Muhammad grinned. "My father's got a whole itinerary worked out—first Paris, then Damascus, and he wants to visit all the relatives in Tashkent. It'll be great—all those cities and people. It has to be more interesting than here, right?"

"Sure—it'll be terrific."

"I guess I'll miss this place, but it's time to see something different." Muhammad sounded a little tense, as if he were trying to convince himself about Earth's wonders, but maybe Max was only imagining that.

"Look, I still have some studying to catch up on." Max got up, his time alone by the stream lost; he felt angry at Muhammad for taking it from him. "Have to go." He hurried away, heading down to the library in the circle of trees below the falls.

He liked the saucer-shaped building that housed the library. There were no doors, only open entrances and exits. He went inside, found an empty terminal and sat down. The library's memory fascinated him because he could demand an answer to any question, not just to material from class discussions.

He liked to study alone; class discussions too often seemed faked. It was too easy to ask questions or give answers just to make a show of having something to say. Lucinda often used the discussions to take apart another student's response, even when all she really had to do was answer a question, while Muhammad, who was smart, often held himself back in arguments, as if being everyone's pal was more important than making his point. Max preferred to find things out for himself, by asking real questions in private.

He liked to invent questions that couldn't be answered easily by the library's memory. The Artificial Intelligence would hunt for the answer in its banks, and find that there wasn't enough there to make a reply, which would force it to describe an area of ignorance, or to construct an uninformative, general answer that would be unintentionally funny.

It wasn't the library's fault. Most of its knowledge was over twenty years old, and additions made during the habitat's voyage to Alpha Centauri could not equal the work done in that time by the millions of researchers in the home Sunspace, working in thousands of fields, using even more advanced Artificial Intelligences. "They're way ahead of us," Max's father had told him. "Just think of all the new things we'll learn when we get back!"

Max did not turn on the display, but sat staring into the dark frame, feeling that everything was about to be

taken away from him. He got up from the terminal and wandered to the center of the saucer, determined to keep to the routine that he enjoyed. There he sat down in one of the observation chambers and put on a helmet.

Suddenly he was floating among the stars. The ones ahead were shifted into redness as the habitat collided head-on with their light, compressing the waves into the shorter lengths that were red to the human eye. The light catching up with the habitat was stretched into long, ultraviolet frequencies. He watched the hues vary, wondering at the vastness of the universe and the strangeness of being alive, of being himself rather than someone else. He might have been a star or a planet instead of something that wondered about itself.

When Max came out into the golden light of late afternoon, a pedal glider was moving down the long, zero-gravity axis of the hollow, the space around which the habitat turned to give the inner surface and levels below a centrifugal gravity.

This was the only home he had ever known. It was carrying fifteen hundred and seven people back to what the adults called home, to the star called the Sun, to the family of planets and habitats of which Earth was the parent. Arrival time was now only two months away, and there was nothing he could do to change the scheduled return to the civilization that had launched his world across the 4.3 light-years to Alpha Centauri. The return would complete a great adventure, his parents had always told him.

Maybe it was the idea of there being so many billions of people on Earth, the Moon, Mars, and elsewhere in Sunspace that made him unhappy about leaving the habitat. Humankind was much larger than the portion he had grown up with. There were only a hundred and four kids in the returning habitat. On Earth there would be people he had never met, and would never meet. He had seen many people in the library holos, and had listened to their lectures and watched their behavior in old films, but he had never quite believed that so many people could all be different from one another. With thousands of millions, too many would be alike. It seemed strange and unnecessary to have so many, nearly twenty billion throughout Earth's Sunspace.

"Should we have raised children?" he had once overheard his mother say. "I sometimes wonder. You know what some are saying—that we've brought up a bunch of self-centered kids without a lot of social skills who won't ever fit in back home."

"I've heard it, Rosalie," his father had answered. "Those people are the ones who didn't have kids."

"Maybe we were selfish, Joe," she had continued, "telling ourselves that having children would make our journey more normal. We wouldn't feel so alone as a community all these years. I worry that we had these children for ourselves only. What if we've spoiled them for any kind of life back home?"

"Oh, I don't think so," Joe had said.

"Max has never known anything but this protected world," Rosalie had objected.

"He'll learn and adapt, I'm sure."

Max went down the library path and strolled between the tall maple trees until he came out on the road that led up the habitat to his house. The sunplate was warm on his back as he walked toward the rocky forward end of the world. After a few minutes he slowed his pace, still feeling resentful. His parents had always talked of "going home"; but they had lived on Earth, so abandoning the habitat could never mean as much to them. He imagined it in orbit around a crowded Earth, empty and waiting to be torn apart, or used for some other purpose. Everything he had known would be gone, and the Earth would swallow him.

A chill passed through him as he turned around and gazed at the beauty of sunplate and green hollow, then closed his eyes and felt every part of the habitat within himself. The original asteroid had been five kilometers long. Its open space, four kilometers long and two across, had been cut out of the core. Just outside the hollow there was an engineering level, and beyond that hundreds of meters of rock and nickel-iron protected the inner world from the dangers of space. Rotation gave the inner surfaces nearly one Earth gravity. It wasn't the same as gravity on a planet, where the large mass exerted its own pull; centrifugal gravity was the same action that held water down at the bottom of a bucket spinning at the end of a line. There were dangers in walking around on a surface where your head pointed toward the center of the world and the stars were outside, under your feet, and if you jumped too high you might not come down where you wanted; but he was used to it, and felt pride in understanding his world.

He left the road and climbed the grassy hillside. Halfway up he lay down on his back and gazed up at the land two kilometers overhead. It was always a wonder to him that this peaceful scene of green countryside, roads, paths, and houses was moving through space at a speed that he understood but could not imagine. The vast power output of the matter-antimatter reactors went into the null-gravity field, whose gentle but continuous push made it possible for his habitat to attain the high fraction of light speed needed to reach the nearer stars in a reasonable time, and to do so in relative safety and comfort. Earth was readying other habitats to voyage to still farther stars. Slowly, humankind would spread outward into this spiral arm of the galaxy.

Max did not remember the arrival at Alpha Centauri. He had been born just as exploration of that system was beginning, and his earliest memory was of Centauri A, the yellow sun of the triple star system, and its fourth planet, where for the first time he had seen oceans and green continents, all on the *outside* of a world so much larger than his own. The sight from space had frightened him at first.

His parents had taken him on a field trip with some of the other children, so they would see something of the alien system before departure. "They should have a memory of this place," his mother had said. Max remembered the colors of the three suns. Rocky moons circled the dead worlds of the small red sun. The dim white

sun seemed lonely. Centauri A resembled Earth's Sun, his father had told him.

Lucian "Lucky" Russell, a planetary specialist, had piloted the shuttle, and had given a lecture about its systems at the end of the two-week trip. By the time Max was seven years old, a new habitat was being built in high orbit around Centauri A-4. Five hundred people had settled inside the second hollow. It would explore and carry on research in the Centauri system while the first habitat went home.

The trip from Earth had taken nearly ten years. Allowing seven years for exploration at Centauri, time for acceleration, deceleration and maneuvering, and another decade for the return, some twenty-seven years had passed since the habitat left Earth's Sunspace. Joe Sorby and Rosalie Allport, Max's parents, were twenty-seven years older, but their friends back home had aged nearly thirty-six years, because at two-thirds of light speed, time on the habitat passed more slowly than it did for people on Earth.

"We'll try for a higher velocity on the way back," his father had told him. "We'll get back sooner, from our point of view, but even more time will have passed on Earth." Max had not understood all this too well at age seven, but at sixteen Einstein's Time Contraction Theory was no longer a mystery; it seemed only natural that fast-moving clocks ran slower in comparison to clocks left behind. This was true not only of mechanical clocks, but also of biological clocks like his body. The habitat's return would be quicker at eighty percent of light speed, but the price would be arrival farther in Earth's future, so the final decision had been to return at two-thirds of light speed, not only to avoid the psychological problems of a larger dislocation in time, but also to save wear and tear on the habitat from high-speed collisions with interstellar gas and dust. At speeds closer to that of light, even the smallest particle would strike the habitat with enormous force, so even more energy would be needed for the deflection shield.

Max didn't care if he arrived farther in Earth's future; he had nothing to lose, since he had never seen Earth and knew no one there. People who had been the same age as his parents would now be older. That was interesting, but for him the only thing that mattered was that he would lose his home and have to face a strange new world. The people of the habitat would disperse to places on Earth, the Moon and Mars, to other habitats, going wherever their work took them.

He had never quite believed that it would happen. His next-door neighbors, Leni and Arthur Cheney, would move away, and he might never see them again. Max smiled bitterly; he would even prefer to put up with Arthur, who had bullied him when they were younger and now settled for getting off an occasional sarcastic remark when his sister Leni wasn't around to restrain him. Once, he had wished that Arthur would be sucked out of an airlock, never to be seen again; now he was already starting to miss the creep. It was like thinking about dying, or trying to remember the time when he couldn't read or do math. People lived well past a century, but sooner or later death would come. He could

not imagine dying, and he had never worried about the return to Earth until this year, but here it was, coming closer every minute.

He sat up in the grass, feeling a bit warm. The sun-plate was dimming now, glowing orange as the afternoon faded. He felt a slight breeze on his face. Filmy clouds appeared in the great open space, drifting across the houses on the other side of the world. Max lay back again and closed his eyes, trying to regain his feelings of happiness and unconcern for the future. He breathed deeply, then opened his eyes to the yellow flowers near him, pushing away the image in his mind of a rocky nickel-iron asteroid decelerating toward a Sunspace that he would never be able to accept as home.

He got up suddenly and hurried down the hillside. He passed the elevator kiosk at the crossroads just as Jane and Alice Sanger emerged from the engineering level below the countryside, where their father worked in climate control. They usually visited him after school.

"Hi, Max!" the twins called out together, and smiled the same broad smile as he went by them. Sometimes one of them would call out "Hi," and the other "Max," and they also liked to finish each other's math problems.

"Hello," he called back nervously, hurrying on; he didn't feel like talking to anyone just now.

He turned up the path to his house and stopped, as if seeing it for the first time. His father had once told him that single-level structures of its kind were common in vacation spots on Earth. They were temporary dwellings, with minimal insulation and security, and were usually made of wood or ceramic materials. The habitat's perfect weather and enclosed, gardenlike conditions were made to order for such houses. Camp houses, his mother had called them. Trembling, he imagined his house empty, the hollow deserted and dark. His home had always been *intended* to be temporary. His whole world was temporary, and would expire like a school term—but no one would ever come back. Everyone was looking forward to the end.

## 2

"What's the matter?" Joe Sorby asked in a tone of mild concern.

Max stared down at his dinner, knowing that his father would never understand.

"Well, what is it?" Joe asked again.

"Nothing," Max replied, looking up.

His father smiled at him as if they were about to share a secret, then shifted his stocky body in the chair.

"You've seemed sad for some time," his mother said gently. Max looked into her large brown eyes, so much like his own that he often felt he could read her thoughts.

Joe scowled. "Oh, come on, talking won't hurt."

How could his parents understand? They had grown up with millions of people around them. They were going back to places they knew. Even Rosalie, who had been born on Bernal One, the large habitat in the orbit of Earth's Moon, was used to many thousands of people, and she had visited Earth and the Moon.

Max had no idea if any of the other kids felt as he did behind their show of looking forward to coming home, of visiting all the places and things they had read about, seen in films, videos, and holos, or been told about by their parents. Some of them had to be faking, but he wasn't close enough to any of them to know how they felt about most things. Even Muhammad Bekhtar, still often mistaken for his best friend, was only someone he had studied and cycled with a few times. Max had never tried to be a real friend, and Muhammad had naturally started spending more time with others. Max couldn't believe that some of them weren't upset by the fact that their home would soon be taken away from them.

Not that there was really any way for him to find out. If he admitted his own fears to someone else, he might only end up with the others mocking him, and with even more assurances from his parents and other adults that everything would be just fine.

"Max," his mother said in a firm but still kindly voice, "tell us what's wrong. We'll try to understand."

They meant well, but they wouldn't understand. The ship-habitat had been built for a purpose that was now almost achieved, and soon it would be time to do something else. They would say he was being backward and selfish, unreasonably attached to something no one should have this much feeling about.

"I know it shouldn't bother me," he said finally. "We've all been looking forward to the return." He paused suddenly, his throat dry, and said bitterly, "But not me. You all came from there. . . ."

Joe was looking at him intently. "I had no idea you felt this way."

"It's not fair!" Max blurted out. "I never had any say in it." He took a long sip of water, unable to go on.

"I understand," Rosalie said. "You grew up here, and now it's going to be taken away."

Max nodded, feeling ashamed.

Joe sighed. "I see you've thought about this, but it's really nothing to get upset about. Back on Earth, kids who grew up in small towns were often afraid of moving to big cities."

Max took a deep breath. "Then why'd they have to?"

"Lots of reasons. Their parents had to relocate for work, or the kids had to go to school in a big city. Sometimes they ran away to the big city because they hated their small towns."

"I'm sure you'll like a bigger world," Rosalie added, "when you see what it's like."

Max swallowed and was silent. Great. They had it all backwards.

"We're just a small town, really," his mother said. "Don't you see that it would be wrong for you not to ever know anything else?"

"I suppose so," Max replied.

His parents were silent.

"We'll never come back here again," he added in a breaking voice.

"Who knows?" Joe said, leaning forward and patting him on the shoulder. "Maybe they'll use this place to go somewhere else. We've shown that it's pretty safe to live

in. They'll refit it with better collision shielding, so it can get closer to light speed, and new people will move in and take it out again."

"You don't really think so," Max said, imagining strangers sitting at this table.

Joe shrugged. "It's possible."

"We'll never see this house again," Max added.

His mother smiled. "You know we can't decide any of these things. Did you think we'd live here forever?"

"Look, son," Joe said firmly, "we have no say in what will happen to this habitat after we return it, and there's no reason why we should. The plan was to take it out and come back. We'll make new lives. One thing will end and another begin. I think you understand that. It will happen to you several times in the long life you'll live."

Max was silent, knowing they were right, but his feelings rebelled.

"Hey," Joe said suddenly, "we should be at the community center. The Sun's close enough now to show up bright, and the broadcasts will probably start getting through our interference tonight."

"I don't feel like it tonight," Max answered.

"Come on," his father said. "Everyone else is probably over there by now."

"There's so much that's happened since we've been gone," Rosalie said excitedly. "We'll have to work hard to take it all in. I mean, we know generally what's been going on, but it's like learning history—we'll know what happened, but never as if we'd lived it. We can't get back the time we lost. I feel apprehensive about coming back, but for different reasons than yours, Max."

"Just think, son," Joe said. "You'll be going from this small world to a much larger one. A whole Sunspace of worlds."

"But it's not right that we should lose our home, Dad."

"You're looking at it all wrong," Joe said impatiently, and Max knew his parents were thinking that he'd forgotten how he felt as soon as new things came along to distract him. "You can't hang onto your first home forever."

"We're late," Rosalie said, getting up from the table.

He would never forget, Max promised himself.

### 3

They got on their bikes and pedaled toward the sunplate, Max on his racer, Joe and Rosalie on their two-seater, with Joe in the back. The light dimmed toward what his parents called moonlight. He pushed on ahead, making his best speed, feeling guilty that he couldn't share his parents' eagerness. He glanced at his father and saw the look of a stranger who might become angry.

The roads and walkways were empty. Almost everyone would already be at the center, anticipating that direct contact with Earth would come today. When the sunplate was only a few hundred meters away, it towered over the nearby landscape.

Max pulled up to the Community Center's bike rack. His parents caught up and parked their bike next to his. Together they walked into the ramp tunnel under the sunplate and came up into the amphitheater.

"We're the last ones in," Joe said as they entered the two-hundred-meter-diameter spherical space cut in the forward section of the asteroid. The lower half of the sphere cradled two thousand seats, but more than five hundred were now empty because almost that many people had chosen to stay behind in the new habitat at Centauri. The great center space was already aglow as Max and his parents took seats at the end of the top row in the first section. The center space was for projecting plays, educational programs, operas, ballets, old films, videos and holos from Earth, as well as for display of information during Town Meetings. The much smaller chamber of the Control Bridge was just above the Community Center.

The glow in the great space meant that the forward view was picking up the countless collisions with gas and dust in the deflecting shield's field as the habitat slowed from two-thirds of light speed.

They were in Earth's outer Sunspace now, perhaps already inside the orbit of Pluto. Transmissions from Earth would be coming in at any moment. Some news of the last thirty-six years had reached the habitat during the years at Centauri, but clear reception of radio signals was difficult during acceleration and deceleration.

The view cleared and stars shone in the great hollow. A map grid flashed on, marking Earth's Sun. Not very impressive for the center of a complex civilization, Max thought as he looked at the yellow star. Earth, home to ten billion people, was a world of great cities and thousands of smaller communities, of oceans, rivers, mountains, plains, deserts, lakes, polar caps, hurricanes, tidal waves, dust storms, and long-dead civilizations. Luna, Earth's moon, a great industrial and scientific center, was home to nearly two million people. L-4 and L-5, positions in the Moon's orbit, were stable locations for a growing armada of space habitats. Among them was Bernal One, the large sphere where Max's mother had been born and raised, and where his father had gone to college.

Second from the Sun was Venus, which was being studied in preparation for terraforming—a process that might make the hot, cloudy planet another Earth in a century or two. Close in around the Sun was Mercury. Its asteroid habitats were home to a thriving community of miners. Joe and Rosalie had helped build the first habitat there before they joined the Interstellar Project.

Outward from Earth was the Martian colony, with its great spaceports at Deimos and Phobos, the planet's two moons. Nearly three million people lived in large agricultural domes on the desert that was being reclaimed along the old natural waterways. One day Mars would be terraformed into a world of forests, rivers, lakes and seas. The old dream of fully occupying the three planets of the solar system's temperate zone would be fulfilled.

Beyond Mars, habitats orbited Jupiter and Saturn. Max's habitat had been built around Saturn's moon, Titan. Mobile habitats had explored the outer solar system right into the Oort Cloud of cometary material, so it had been a natural step to send a habitat out to the nearest star.

Nothing of this great Sunspace civilization showed from Pluto's orbit. All his life Max had been learning about it,

studying its works, seeing holos of its locales; but it had never been as real to him as the house in which he lived, or the paths he walked in the green hollow; not even as real as the worlds of Centauri.

"WELCOME HOME!" a male voice boomed from the starry space, startling Max. His mother gave him a look of concern. He felt anxious, but he smiled at her and tried to look interested. She patted his left hand, and suddenly he wished that Earth and its Sunspace civilization would disappear.

"ARE YOU RECEIVING US? THIS IS TITAN DOCKS. DO YOU NEED ANY ASSISTANCE? WE CAN SEND TUGS OUT TO MEET YOU."

"No help of any kind is required," Linda ten Eyck answered from the communications console. "We will arrive in eighty-nine days."

As Navigator and Life Support Systems Specialist, Linda was the closest thing the habitat had to a captain. Joe had once joked that it would take two dozen experts jammed into one body to make a captain. A team working through an artificial intelligence was more efficient. But even though Linda was part of that team, she tended to assume more responsibility than the others. She loved her job. Some people said that she would be lost without it.

Max noticed Emil and Lucinda sitting in the first row with their father, Jake LeStrange, just below the platform on which their mother stood. Lucinda, Max realized, had let him off easy today. A month ago he had been standing around awkwardly at a party, trying to strike up a conversation with a few of the other boys, when Lucinda arrived with Emil, entering the room as if she were doing everyone a favor by coming. She had smiled and walked toward him. "I wasn't smiling at you," she had said before he could say hello, moving away with Arthur Cheney. Everyone had laughed at his mistake, although Emil had given him an unexpected look of sympathy. Humiliated, Max had left. "You should have stayed," his mother had told him. "They would have forgotten the whole thing in a few minutes."

Lucinda and Emil argued a lot with each other, and with anyone else who would let them. They sometimes berated Max because he hadn't yet chosen a field of study. Physics was their big choice. Emil was sometimes fun to talk to, but he would shut up and become another person when his sister showed up. She was Max's age, only a year and a half older than Emil, but she bossed her brother around. Max had once told him not to trail around after her so much. "Don't ever listen to him," Max heard her tell Emil. "He's asleep every afternoon. You'd think the son of a maintenance engineer would be more practical." Max had known then that she had seen him lying down by the waterfall. Lucinda would consider that a total waste of time, a sign of laziness and lack of ambition. No one would ever catch Lucinda idling away part of the day when she might have been studying or doing something constructive.

"YOU ARE NOW RECEIVING A SUMMARY OF MAJOR EVENTS FROM THE LAST THIRTY-SIX YEARS," the booming voice continued, "CONTINUING FROM THE TRANSMISSION

THAT WAS BEAMED TO COINCIDE WITH YOUR ARRIVAL AT CENTAURI."

"We are receiving," Linda replied, sitting down before the console. "Exploration of Centauri A, B, and C was completed productively, and the new habitat established. One hundred four children were born before our arrival at Alpha Centauri, and these are all returning with us. One hundred sixteen were born after the new habitat became livable, and they have remained at Centauri. We've had sixty-four deaths, three of them from accidents. Otherwise our community is healthy and thriving. . . ."

Even at light speed, it would be over four hours before Linda's reply reached Titan, and nearly six before Earth heard it. Each side had only started the flow of information that would continue as the habitat made its final approach. It was not a real conversation.

"We're down to about 750,000 kilometers per hour," Linda said.

"We're just crawling along now," Joe whispered at Max's right.

"GREAT CELEBRATIONS ARE READY TO START ON YOUR ARRIVAL," the voice from Titan boomed. Max glanced at Joe, then at Rosalie. His parents were staring intently into the great space, and he knew that they had forgotten his problem; they were remembering people and places he had never known.

"We report no evidence of intelligent life anywhere in the Centauri system," Linda said.

Lucinda and her mother looked alike, even though Lucinda wore her red hair long and her mother had it up in braids. Linda's green eyes were friendlier. Mother and daughter were often mistaken for each other from a distance, especially in shorts, which showed off their long legs. Max had been fooled a number of times, feeling relieved when he encountered Linda instead of her daughter. On one such occasion, the Navigator had put her arm around his shoulder and walked with him down the road to the library, telling him what good friends she had been with his father on Bernal One and Mercury.

"However," Linda continued, "the heavily forested fourth planet of Centauri A is home to small monkeylike bipeds. They will be observed more carefully by teams from the habitat. Construction of the new habitat from a suitable nickel-iron asteroid went routinely. The community should be thriving by now. . . ."

Emil was chubby and his father was thin, but there was a similar look in their dark brown eyes, and in the slightly arrogant way they held their heads. Emil's brown hair was long, Jake's always shaved down to a stubble.

Lucinda shifted her crossed legs to one side. Max stared. She never looked back even when she knew he was staring at her. He felt foolish about being attracted to such an obnoxious girl.

"WE HAVE IMPORTANT NEWS," the voice from Titan cut in. "IN 2081, WE SENT A SMALL MOBILE WITH A TYPE II PUSHER DRIVE OUT INTO THE COMETARY HALO BEYOND PLUTO TO INVESTIGATE WHAT SEEMED TO BE THE SOURCE OF A SIGNAL. THE EXPEDITION FOUND AN ALIEN RADIO TRANSMITTER. BY THAT TIME OUR NEW TACHYON PARTICLE DETECTOR WAS OPERATIONAL. IT SHOWED US

THAT THOUSANDS OF FASTER-THAN-LIGHT COMMUNICATIONS CRISSCROSS THE GALAXY. A NUMBER OF THESE TACHYON LINES PASS THROUGH OUR SUN, FOR REASONS WE DO NOT UNDERSTAND. THE GALAXY IS ALIVE WITH CIVILIZATIONS AND WE CAN'T SPEAK TO ANY OF THEM!"

"Not yet, anyway," his father whispered.

"IT'S AS IF THE RADIO BEACON HAD BEEN A SMOKE SIGNAL, SENT UP BECAUSE WE WOULD BE SURE TO NOTICE IT, BACKWARD AS WE ARE, DECODED INTO A PICTURE STORY, THE SIGNAL SHOWED US THE DANGER OF INFALLING COMETS FROM THE HALO. WE'RE NOT ALONE IN THE GALAXY. YOU ARE RETURNING AT WHAT MAY BE A TIME OF GREAT DANGER AND NEW POSSIBILITIES. . . ."

"Just think," Joe whispered excitedly, "there are probably a million times more aliens out there than all the people in Sunspace. What do you think of that, Max?"

Max had studied the possibility of contact with aliens, but had always imagined it happening in the far future. This news was strange, because there had been no actual two-way contact, only the discovery that alien cultures existed and seemed to be unaware of, or uninterested in, humankind.

Linda sat back at the console, waiting.

"We've been topped," Joe said softly. "Our return isn't the biggest thing going."

"I wouldn't worry too much about it," Rosalie said, sounding critical. She often kidded Joe. Sometimes Max didn't understand what the joke was, and felt left out; but he knew that his parents were best friends, even when they disagreed.

As he looked around at the hushed gathering, Max noticed students from his class in the lower rows. Muhammad sat with his father and brother, Jane and Alice Sanger between their parents. Tutor Jonney sat alone in the first row. Everyone was staring at the small yellow sun in the center space. A new time was coming, he realized, not just for him, but for the whole habitat, and maybe for all human beings. He wished that he could be happier about it.

"BY NOW YOU SHOULD BE RECEIVING THE ENTIRE COMPRESSED TRANSMISSION OF EVENTS FROM THE LAST THIRTY-SIX YEARS," the voice from Titan said suddenly. "THIS WILL GIVE YOU ENOUGH BASIC DATA TO REORIENT YOUR POPULATION BEFORE ARRIVAL."

"Receiving," Linda replied, and the sound of conversation returned to the amphitheater.

"There'll be plays and films," his mother said, "and new books, dances and newscasts. More than we can ever catch up on." She was silent for a moment. "It's almost as if we've been dead all this time, and now we're coming back to life."

"Don't worry," his father said. "A lot of what we've missed is probably junk."

"What *you* say is junk," Rosalie replied.

Max saw his father smile. "It's strange," he continued seriously, "to feel accountable to people back here, many of whom weren't even alive when we left. All this time has made us feel independent. Makes you think it would be possible to start fresh somewhere else, with just a few people."

"Now you sound like Max," Rosalie asked. "Aren't you curious, and glad to be back?"

A look of uncertainty came into his father's face, and Max felt closer to him. Who were these people of Earth? Why should they have control over what happened to his world? Maybe his father understood him after all.

"Just a feeling," Joe said. "We're home."

Max felt betrayed. "Why can't we just go away and live on our own?" he asked suddenly, his voice carrying. People turned around to look at him. There was Arthur Cheney, with his usual mocking grin. Muhammad made a face, then poked his brother Hussein in the ribs. Lucinda turned her head and shot him a look of contempt. Max glared back, but she had already turned away.

"We could go off on our own," his father replied gently, "but that's not what was planned. You know that."

"We left a habitat at Centauri," Max objected.

"That was planned."

"Maybe I should have stayed there."

"But you deserve to see Earth," his mother said, looking at him with dismay.

"You'll feel differently when you see things for yourself," Joe added. "I promise."

Max looked away. His feelings didn't count. Rosalie touched his hand; Joe reached over and ruffled his hair. Everyone else seemed to know what was best for him.

Linda ten Eyck stood up from the console and looked around at the assembly. Then she paced back and forth, stopped finally and in a quavering voice said, "I'd like to thank all of you for the help you've given me all these years. We haven't always agreed, but my . . . our team could not have functioned without your suggestions and skills. I know that some of you may be feeling sad that our worldlet is about to rejoin a larger one. We are privileged to feel for a time as if we were all of humankind, and it will be hard to lose the sense of independence that was ours."

Joe nudged Max. "See," he whispered, "you're not the only one."

"I hope," Linda said in a stronger voice, "that we'll keep in touch in the years ahead, and that perhaps some of us will have the chance to work together again." The Navigator was silent as she gazed up at the people around her. Max saw that she was very moved.

"I've never seen her like this," Joe whispered to Rosalie. "Didn't know she had that much sentiment in her."

"She's saying goodbye to a lot," Rosalie whispered back.

People began to applaud. Many stood up, shouting their appreciation. Max looked up at the image of Earth's Sun, which now seemed brighter.

Suddenly, the halo of the forward view flickered. Linda went to the console and made adjustments, but the flickering persisted. The stars winked in and out. The image of the Sun brightened and grew larger in steps, as if the habitat were rushing toward it in large jumps.

"The whole board's dead," Linda said to a silent chamber. "It's not possible!" she shouted. "We can't be that close."

The Sun was now a white-hot ball in the center space.



Max turned to his parents. Joe stared. Rosalie's eyes were wide with fear.

"We're heading right into it," the Navigator said grimly.

4

The Sun grew larger and brighter.

Max felt his mother's hand in his, squeezing. Joe put his arm around his shoulders. People cried out in astonishment as they realized that somehow, in a few minutes at most, they would be vaporized. It was impossible that the habitat could have traveled from the outer fringes of the solar system in so short a time, and was about to fall into the Sun. It had to be a bad dream, Max told himself.

More than half the viewport was now filled with the shimmering photosphere. Cancerous black spots waged war with swirling storms of plasma. Prominences shot out into space. People moaned and whimpered as the giant's fiery tongues tasted the habitat.

Max looked at his mother. Her eyes were closed as she held his hand. His father's arm was a vise around Max's shoulders. "Can't be," Joe whispered.

Max tensed against his father as the Sun's image faded to a gray ghostliness.

"A malfunction in the holo unit," Joe said in a trembling voice.

Linda worked the console, but the view was unaffected. She looked up, then said something through the intercom on the panel. A voice answered faintly.

The ghostly hemisphere of the Sun disappeared. Linda sat back, then swiveled to face the gathering.

"That is the external view," she said. "The universe seems to have vanished from around us."

As Max gazed into the strange grayness, he realized that somehow his wish had come true. Everything he had feared was gone. The habitat was on its own again.

A murmur passed through the chamber.

"Is this a joke?" Muhammad's father demanded.

"It must be!" a woman shouted, laughing.

"Sure—it's a homecoming prank!" a man shouted from the back row.

Linda ten Eyck stood up. "No," she said softly.

In the silence, Max felt a slow rhythm, as if another heart were beating inside his own. He looked at his parents.

"I feel it," Rosalie said.

"So do I," Joe added.

People were speaking to one another, or clutching at those nearest them, and Max knew that they were all feeling the rhythm inside themselves.

"Something's very wrong," Rosalie said.

"We're being pulled forward!" Linda shouted.

As Max gazed into the gray holo, he sensed that something was waiting up ahead in the alien space.

Jake LeStrange got up and hurried over to the console, where Linda was leaning forward, talking to the control bridge through the intercom. He whispered something into his wife's ear. Emil and Lucinda sat very still in the first row. Max took a deep breath and listened to the intruding, alien pulse within himself.

A giant black globe appeared in the gray space. The gathering cried out in fear and wonder.

"Oh, God!" Rosalie exclaimed.

The black globe hung in the gray void and seemed to pulse with energy. Long cables floated out from it. This, Max realized, might be the source of the beat they all felt.

"The object ahead," Linda said, "is a hundred kilometers in diameter. Our drive is dead. We can't turn away."

The globe grew larger. Max glanced at Joe and Rosalie. They were staring at the holo with dismay.

An opening appeared on the black globe's equator. Dazzling white light shot out.

"We're being pulled in," Linda said as the globe covered the entire view. The opening glowed white-hot, as if from a furnace, and the viewport turned completely white. "No danger signals from our life-support systems," Linda said. "Only our drive is out."

"Something wants us," Joe said, shaking his head.

"But who?" Max asked, wondering what had happened to the Sun.

Joe let out a nervous breath and looked baffled. "Are we being hijacked?" Max asked, feeling both curious and fearful.

The white light filled the amphitheater, making everyone very pale. Max looked at his hands. His veins seemed almost black in the glare.

The holo winked off.

"We've stopped," Linda announced to the silent chamber. It's swallowed us, Max thought.

After a long silence Linda said, "I think you should all go to your homes and wait as calmly as you can. We don't know what's happened. Announcements will be made as we learn more. There's no point in waiting here."

"Let's go," Joe said as he stood up.

People stood in the aisles and stared up into the dark viewport. Max noticed that Emil and Lucinda were at the console with their parents. Suddenly Lucinda looked up toward him, her eyes wide with fear, no longer the confident person he had known.

"Come on," Joe said. Max followed with his mother.

They joined the crowd moving toward the ramp, and in a few minutes emerged into the nightglow of the hollow. A gentle breeze stirred across the inner countryside. The habitat was still the same; it seemed impossible that anything could be wrong.

Joe was silent as they came to the bicycle rack. Max saw his mother's hands shake as she grabbed the handlebars and rolled out the bike. Suddenly he knew that for him home was just up the road; but for his parents it was another place they carried inside them, however strange that seemed to him, and he had told them that he wanted no part of it.

"Why did this happen?" Rosalie asked, her voice trembling.

Joe sighed, then laughed nervously as they pushed off, turned on their headlamps, and pedaled up toward the rise, staring ahead, gripping the handlebars.

Everywhere in the hollow people were hurrying to their houses. They walked or rode bicycles and small vehicles along the walkways and roads of the inner sur-

face. Max glanced overhead and saw house lights winking on. People were silent as he pedaled past them; worried faces stared back at him. Everything he had feared seemed suddenly unimportant.

They sat silently in the living room, Joe in his chair, Rosalie on the sofa, and Max cross-legged on the carpet.

"All the planning and effort," Joe said bitterly. "All these years of success, and now this!"

"Is it some kind of accident?" Rosalie asked. "Did we do something wrong?"

"I don't think it's anything we did," Joe said.

Max tensed, imagining that something had set a trap for his world.

Joe stood up suddenly and stuck his hands in his coverall pockets. "Makes no sense at all!" He shook his head. "My old friend Morey would go nuts over this. He'd say we were all dreaming, and try to wake himself up." He glanced at his timer. "Have to get to my nine o'clock shift." He looked at Max, then at Rosalie. "Try not to worry. We must keep up our routines."

"We're prisoners, aren't we?" Max asked.

Joe sighed nervously and clenched his right hand.

"I'll be back as soon as I can."

"Where will you be?" Rosalie asked.

"The maintenance teams will probably be at the drive housing, checking to see if this could have been caused by some kind of malfunction."

"Who are we kidding, Joe?" Rosalie said suddenly.

"We're not lost and there's nothing wrong with the habitat. We're inside a giant sphere. Someone built it, and it's not anybody we know."

Joe nodded. "Both of you try to get some sleep while I'm gone."

Who would want to capture us? Max wondered as his father hurried away.

## 5

Unable to sleep, Max tossed and turned in bed. He dozed for a few moments, then fell from a high cliff and woke in a sweat, seeing his world trapped inside something bigger. What was the big sphere, and where was it? Who had made it, and for what purpose?

A gentle breeze blew into his room. He got up and sat in the open window to cool off. The inner countryside was peaceful in the nightglow. He looked up at the houses overhead, half expecting them to tear loose and float into the center space. Whenever he thought of Earth curving the other way for thousands of kilometers, with only a thin layer of air protecting life from space, the hollow and the levels around it made him feel safe; but now he almost wished that he were on Earth, which he might never see because something had swallowed his habitat.

What was outside? Was something waiting there, preparing to tear the habitat open? He imagined giant alien machines ripping through the asteroid's crust, looking for the small human creatures within. What did the aliens want? Had they set the giant sphere as a trap?

Suddenly Max wanted to explore outside the habitat. Then, just as suddenly as it had come into him, the impulse died. He leaned back against the window frame and closed his eyes for a moment, then opened them and saw two figures coming up the path to his house—Emil and Lucinda, dressed in shorts and hiking shoes.

What were they doing out so late, and why were they coming to his house? They came to his window and looked up, as if they expected to find him sitting here.

"What is it?" he demanded in a whisper.

"Come out," Lucinda said.

"What for?" Max asked, trying to see their faces in the nightglow. It was a prank of some kind, he thought, then realized that even they wouldn't be trying to fool around at a time like this.

"Hurry!" Lucinda shouted.

Max hesitated. "Do you feel it, too?" he asked. "What's going on?"

"We're not . . . sure," Emil said. "I want to see what's outside. I *have* to see what's there!"

It was not a prank, Max realized. Something was very wrong with all three of them.

"I'll be right out," He went inside, found his shirt, shorts, and hiking shoes, and dressed quickly, then put on his coveralls. He usually wore them as extra protection when his father took him along on his maintenance route in the narrows of the engineering level. Where was he going now? It didn't seem to matter.

He went back to the window, sat with his feet over the edge, and jumped the two meters to the ground.

"Well?" Max asked.

Emil turned away and started down toward the main road. Lucinda followed. Max hesitated, then marched after them.

"Where are we going?" he asked as he caught up.

He got no answer.

"Come on, Emil, where to?" He quickened his pace until he was walking between the pair.

"Outside . . . I think," Emil managed to say.

"What?"

"Something wants us outside," Lucinda said firmly, as if trying to convince herself.

"But we'll be stopped," Max objected, feeling dreamy and lost.

"Emil knows a way out that isn't used much," Lucinda explained without looking at him.

"As soon as we open a lock," Max said, "it'll show up on the watch displays."

"We'll be gone by then," Emil replied.

"We can't!" Max protested. "We have no idea what's out there."

Despite his protest, Max kept pace with them, now half unwilling and half unable to stop himself. He looked at Lucinda's narrow waist and bare legs, expecting her usual glare of contempt, but she only stared ahead.

"We both dreamed of being outside, in the sphere," Emil said. "Didn't you?"

"No," Max said with a sinking feeling, "I didn't."

"But you were in *our* dream," Lucinda added in a cold tone.



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"That's why we came to get you," Emil said. "We've got to go, and you have to come with us."

"Are you afraid?" Lucinda asked.

"No, I'm not," Max answered, trying to keep up with her. "I feel the things you do, but what is it?"

"We'll find out," Emil said, "and we'll be the first. Aren't you curious?"

Max swallowed hard. Sweat ran down his face as he marched. He felt as if he were sleepwalking, and wondered why he couldn't just turn around and go home. It reminded him of when he had been little and would follow his parents anywhere.

"Where's this way out?" he asked.

"Behind the sunplate," Emil said. "There's a tunnel that leads out at the end of the long axis. The locks open and close manually."

Max looked up at the glowing sunplate. His father had mentioned such exits. They were there because the designers had believed there should always be manual backups for all automatic systems.

Max wanted to go, but tried to resist. "Maybe we should tell someone," he said.

"We've got to go by ourselves, Max," Lucinda said as if reading his thoughts. "Can't you tell it's important?"

"Yes," Max heard himself say. The words seemed to come from a distance, as though they had been spoken by someone else.

The sunplate grew large ahead of them. Time raced. Max's heart beat faster as he kept up his pace. He looked around the darkened hollow, experiencing it with heightened senses, breathing the cool air and smelling the soil and greenery as if they were alien things. He felt as though at any moment his body would grow large and burst through to some greater world outside.

Emil and Lucinda stopped just below the sunplate. Max caught up. It towered above them, balanced dangerously, its moonlight turning the grass around them black. He looked back at his house. Its lights were on, and he knew that his mother had awakened and found him gone. She would be calling his father at work by now.

"Under here," Emil said, dropping to his knees. Max and Lucinda watched as he crawled under the rim of the glowing sunplate. She followed. Max glanced back at his distant house, then dropped down and crept after her.

"I'll have the utility light on in a moment," Emil's voice echoed down the tunnel.

Finally, a dark red light went on, and Lucinda's dark shape rose up in front of him. He stood up and followed her to where Emil was cranking open the first lock.

"Come on," Emil said, and squeezed through the partially open door. Lucinda went after him. Max slipped through after her.

Emil was already cranking the next lock. When it was open just enough to get by, he went through, and Lucinda disappeared after him.

Max followed, feeling vaguely surprised that they wanted him along as he went down a long stretch of tunnel cut smoothly through the rock.

"Here's the outer lock!" Emil shouted, grabbing the crank.

"Don't!" Max shouted, peering ahead in the red light. He rushed forward, feeling as if he had just awakened.

Emil and Lucinda waited for him in silence.

"All the locks are open behind us," he said. "If there's no atmosphere outside, we'll be sucked out, and the habitat will start losing air."

Emil turned the crank. Max wanted to stop him, but couldn't. His mind knew the dangers, but his will was quiet. He took a deep breath, expecting decompression, but the door only slid open.

Emil went through. Lucinda blinked, then went after him.

Max followed, feeling confused. The tunnel turned ninety degrees to his right, and he saw Emil and Lucinda in a circle of white light. They disappeared into the glare. Somehow, there was air outside the habitat. The giant sphere had been built by oxygen-breathers, whatever else they might be, Max thought. Or maybe by beings who were expecting to trap oxygen-breathers.

The light dazzled him as he came to the opening. Then, as his eyes adjusted, he saw Emil and Lucinda below him, standing on what seemed to be an endless glass floor. Blue-white light was everywhere, even coming up through the floor. Emil and Lucinda stood as if something had frightened them into immobility.

"What's wrong?" Max called.

Emil looked up at him. "I'm not sure," he said. "This surface is disorienting." His sister stared at the floor.

"Is it safe?" Max asked.

Emil nodded. "Jump down."

Lucinda looked surprised, as if she had just awakened.

Max stepped out from the opening, and landed next to her. She backed away from him in fear.

"What is it?" he asked.

She shook her head and closed her eyes in dismay. "I don't know."

The floor seemed solid enough to Max. He peered into the hazy brightness, then turned around and faced the habitat. It loomed above them, its gray, rocky surface looking out of place on the clean floor. Part of the great mass seemed to be cradled below the surface.

"So, what now?" he asked, turning to Emil.

"I'm not . . . sure," the boy replied. "One thing's wrong. The habitat isn't spinning now, but we had normal gravity inside. Something is maintaining it—and it doesn't feel different out here, either."

Lucinda still seemed disoriented. Max looked at her with concern. Eyes still closed, she seemed to be listening to the silence.

"What do you hear?" he asked.

"We've got to go that way," she said, pointing away from the habitat.

"Why?"

Her eyes opened and she looked directly at him. "I don't know, but something wants us there."

As they started across the bright floor, Max felt that he had to keep going. He came to himself suddenly, stopped, and looked back at the habitat. Emil and Lucinda walked on. "Wait!" he shouted after them.

They halted and looked back. Lucinda seemed dazed; Emil shook his head. They hurried back to him.

Max stared at the habitat. As far as he could see to his left, its five kilometer-long mass was more than half submerged in the smooth floor, trapped like a rock in ice. He looked up, searching the brightness for a ceiling, but could not see beyond the blue-white glare.

Again he felt unsteady, as if he were trying to wake up. Emil staggered and reached for his sister's hand.

"We've been lured out here," Lucinda said in a trembling voice.

At any moment, Max expected the beings who had built the sphere to appear.

"Who are you?" he shouted. There was no answer, not even an echo.

"So what now?" Emil asked.

"I think they want us to go in that direction," Max said.

"But who are they?" Lucinda asked.

"Nobody we know," Emil answered.

"What will they do if we don't obey," Lucinda said, "force us again?"

"They could have just forced us all the way," Max replied, "but they don't seem to want to do that."

"I'm not so sure," Lucinda said. "And why did they pick us and not anybody else?"

"Then let's go home," Max said.

Emil looked uneasy. Lucinda turned and gazed into the bright distance. "Maybe we should explore," she said. "It might be important."

Max felt queasy. He didn't like the idea of something probing his mind and bending him to its will. He was tempted to turn back, just to see if the strange compulsion would seize him again.

"Lucinda's right," Emil said. "We should find out what's going on."

Max nodded, realizing that they no longer had to be pushed. Were the aliens that clever and knowing about human beings? "All right, we'll go," he said.

Lucinda pointed. "It's still that way."

Max went ahead. After a while, they stopped and looked back at the habitat, now a dark, mountainous outline in the blue haze.

"Look!" Lucinda shouted as they turned away.

Max strained to see ahead, and made out a tall column. He moved forward slowly, noticing that the structure seemed to have no top, but just went up into the brightness and disappeared.

As they approached it, Max saw that the giant column was transparent. Stormy gray and white stuff rolled inside. They came up close and touched the smooth, cold surface. Emil circled the structure and reappeared at Max's left.

"It's about twenty-five meters around," he said.

"But what is it?" Lucinda asked.

Max looked up at the endless column and felt fearful. He turned back toward the habitat, but it was hidden in the brightness now. "Remember," he said, "the habitat is back that way."

"What is this thing for?" Emil said, clearly fascinated by the column.

Max sat down against it, so he would face toward the habitat. Lucinda came and stood over him. "Where is all this? Why is the habitat here?"

Emil dropped down next to him. "This is great, isn't it?" he said with a nervous laugh.

Lucinda sat down cross-legged in front of them.

"Something wanted us out here. Or was it just us?"

"Come on," Max replied. "If this is something you two wanted to do for yourselves, I'm the last person you'd take along." He looked into her green eyes, expecting her to nod scornfully in agreement, but she looked away.

"You're right," she said apologetically. Max stared at her, surprised that she had taken him seriously.

Emil jumped up impatiently. "We're supposed to explore."

Max was still looking at Lucinda when she made a choking sound and pointed behind them. He jumped up and saw that openings had appeared in the column.

"There's twelve," Emil said as he went around and came back from the right.

Each was a perfect square of blackness. Max stepped into one square, drawn by its strangeness, then forced himself to back out, feeling somehow that this was not the right one.

Emil and Lucinda were gone.

"Where are you?" he shouted as he hurried around the column. He halted before an opening, then realized that they might have entered any one of the portals, and that he had lost his bearings by circling the column in panic. He hesitated, then decided that he would have to start somewhere.

"Emil! Lucinda!" he shouted as he stepped into the blackness. It seemed to flow around him, as if it were liquid. He went forward and drifted to the right, sensing the curve of the passage. He stopped suddenly, feeling lost, and backed out again into the light, emerging just in time to glimpse Lucinda as she disappeared into the next entrance.

"Wait!" he shouted, but she ignored him, as though she knew where she was going and didn't care about anyone. He went in after her, and again veered to the right through the flowing darkness. He slowed his pace, reached out, and touched a shoulder.

"Lucinda?"

"It's me," she said.

"Were you trying to lose me? Why are you standing here now?"

"Waiting for you. We have to go through this way."

"Where's Emil?"

"Up ahead."

He slipped his hand into hers. They went forward and bumped into Emil, who moved away.

Lucinda pulled Max along.

"Do you feel strange again?" he asked.

Her hand tightened in his. The cold odorless blackness flowed around them. Max felt as if he were breathing it.

"There's an opening!" Emil shouted as they came around the curve.

Max peered ahead and saw a square of light. Emil's dark shape appeared in it and went out through the exit.

Max and Lucinda rushed forward and emerged into a yellow-lit space. Emil was just ahead.

"We're in a dome of some kind," he said as he faced them. "Look at that!"

Max turned to look at the column from which they had emerged. Glassy, but smaller than the one they had entered, it also rose up into a glowing haze.

Suddenly the yellow light faded. A night sky appeared, with two alien suns setting on a ragged horizon of black mountains. One sun was a white-hot oval, the other a yellow dwarf, also egg-shaped from the distortions caused by mutual gravitational attraction. Rings of glowing red gas spiraled out from the two suns. Max squinted as his eyes adjusted. A great rocky plain surrounded the dome.

"Where are we?" Lucinda asked, letting go of Max's hand.

"Not in Earth's solar system," Emil said, "that's for sure."

"But how did we get here?" she asked.

"Through the passage," Emil answered, "from wherever the giant sphere is, I guess."

"What do you mean?" Max asked.

"Well, our habitat is inside the giant sphere, which is probably somewhere in Earth's Sunspace, I think. When we stepped into the column, it took us to another star system, through some kind of interstellar short-cut. The columns must be a transit system of some kind."

"Maybe not," Max replied. "It could be that this is where the giant sphere is, circling these suns, and we only went from the sphere to this planet."

Emil nodded. "Could be, but it seems more like a bridge system, even if it only took us from the sphere to this dome."

"But that would mean that the sphere captured our habitat and then came here," Lucinda said, puzzled.

They gazed out at the bleak world around them. Max had seen holes of massive double stars, but to stand in the real glow of these suns was eerie. Two stars were locked in a fiery embrace, exchanging rivers of plasma along gravitational and magnetic lines.

"We should go back," Lucinda said, breaking the spell as she retreated toward the column. Max felt her fear. A sudden deep hum sent shivers through him.

"Look!" Emil cried.

The openings in the column were blurred by its speed of rotation.

"What's happening?" Lucinda shouted.

The hum became a roar, then shifted into a high-pitched whine. Max began to feel dizzy from the sound.

Slowly, the whine died away. The openings became clearer and stopped. The stormy mass inside roiled lazily.

"Which is the right way back now?" Lucinda asked.

"No way to know," Emil said with dismay.

"Maybe they all lead back to where we started," Lucinda said.

Max shook his head. "Fat chance."

Emil pointed at the portal in front of him. "Maybe it's this one."

"Let's try it," Max said.

"We'll split up," Emil offered suddenly. "Each of us tries one portal, then we meet back here."

"That's dumb," Lucinda answered. "We might not all wind up back here. These things could go anywhere. It's better to try each one in turn, together."

Emil looked embarrassed. "Right. I wasn't thinking."

"Stay close," Max said as he went in.

Emil and Lucinda were right behind him as he followed the S-curve. The darkness flowed around him, guiding him through. Light flashed ahead, and Max paused. Emil and Lucinda came up on his right as he approached the exit.

"The air smells strange," Emil said.

"Ozone," Max said. "Too much could be poisonous."

"What?" Emil said fearfully.

"Wait," Max said. He turned and looked back, trying to see by the flashing light, then moved to the right and touched the wall. It felt rocky. "We've come out into a cave!"

Emil and Lucinda were moving toward the opening. He hurried after them.

Black clouds rode in a white sky as they emerged onto a high place.

"It's so big!" Emil cried out in surprise at the size of the landscape, then moved toward the edge of the cliff, with Lucinda behind him. Max's curiosity raced as he followed them. They were on the *outside* of a planet, where the surface curved the other way and might be millions of times larger than the interior of the habitat.

A shimmering green forest lay below the cliff. Wind ruffled the trees, whispering. Black clouds swirled in a white sky. Lightning struck the forest, setting fires. Max felt an overpowering sense of danger.

Emil stepped to the edge, then backed up and sat down, covering his eyes.

"Are you all right?" Lucinda asked.

He nodded, eyes closed. "Makes me dizzy."

"I feel lighter," Max said, "so this planet's mass must produce less than our one gravity."

"So do I," Lucinda added, "but not by much."

A gust of wind blew raindrops into their faces. Max backed into some tall weeds that had grown out of cracks in the rock.

"We'd better go!" Lucinda shouted, helping Emil to his feet.

Lightning lit up the whole sky as they retreated from the edge. The black clouds bunched up into a solid blanket.

"Strange place for an exit," Emil said loudly, looking around. "It must have made sense once to have one here, maybe before erosion changed the land."

"Come on!" she shouted at him.

The cliff top trembled and pitched toward the forest. They staggered back from the cave entrance as the world lifted up and tumbled them toward the edge.

Emil cried out as he went over. Max grabbed the tall weeds and hung on. Out of the corner of his eye he saw Lucinda doing the same. The ground shook again, and the weeds came out by their roots. Lucinda screamed as she brushed against him and rolled over the edge.

No, Max thought as his weeds pulled loose. He tried to dig his fingers into the rock as he slid toward the edge. For a moment he hung there, but the next tremor shook him loose.

In a dream there would be time to look down and see where Emil and Lucinda had struck, he thought as he fell, and that would prove it was a dream, he told himself as he hit—and slid into something soft and wet.

Then his feet touched bottom, and he was standing chest-high in mud.

He heard a gurgling sound, and turned to see Lucinda pulling Emil's head out of the mud. "Help me!" she cried. He pushed forward, struggling to make his way to her.

Emil was still breathing when he managed to get to them. Max helped Lucinda hold her brother's unconscious body upright as rain began to fall.

Max looked for a way out.

"What is it?" Lucinda shouted.

"We can't climb back up!" he answered.

"What happened?" Emil asked in a weak voice.

"We fell into this mud," Lucinda said. "How do you feel?"

"Okay," he gasped, struggling to see in the downpour.

"Anything broken?" Max asked.

"I don't think so." Emil moved his arms and stood by himself. "Which way?"

"To the bank," Max said. "Back up to the cave."

Emil and Lucinda pushed through the mud. Max followed, but it was hard going as the rain increased, and suddenly he could see nothing but the shapes of Emil and Lucinda. The rain in his ears was deafening. He forced his way to them, and they huddled together in the mud as lightning washed the world white.

He spoke into Lucinda's ear. "We can't stand this for long. We'll go deaf and catch cold." She coughed violently. "Are you okay?"

She nodded.

"Come on!" he shouted.

They pulled Emil along by his arms. The mud sucked at their legs as if it were alive.

Emil shook free. "I can make it!" he said.

The rain thinned, and Max saw that they were almost at the bank below the cliffs. The smell of mud was strong. Other, stranger smells mingled with the odor of the red clay. How had all this happened to him? Only a few hours ago he had been in his room. He might die here, and nothing would be left of him but wet bones, packed neatly in the clay.

He shook off the gruesome image and pushed harder. Emil and Lucinda fell behind. He slowed and they caught up. Linking arms, they struggled onto the bank and collapsed on the stones and broken slate, then crawled

closer to the clay wall for some shelter from the rain's bombardment. The clay, Max saw, was soft, and part of the wall might fall on them if the rain weakened it. He motioned for Emil and Lucinda to go back. Finally, they covered their heads with their hands and tried to rest.

The rhythm of the rain numbed Max as he floated near sleep, half thinking, half feeling. Images came to him at random. He was playing in the hollow, rolling down its grassy slopes, following a trail around the inner equator, hangkites gliding with the sunplate warm on his face. His mother called for him to come in, and her voice seemed to sing his name. Where was home now? It was trapped in a big sphere somewhere, and he was fighting for his life in another solar system, light-years away. . . .

The rain stopped. He listened to the silence, then sat up and saw white mists twisting like lazy snakes over the stream that flowed through the gorge.

"We've got to get out of here!" he shouted suddenly.

"The water's rising."

Emil and Lucinda sat up.

"Where?" she asked tiredly.

Max estimated that they were not far from where they had gone over the cliff. "We'll go downstream and find a way back up to the cave."

Emil said, "The quake might have closed it."

"I'm bruised all over," Lucinda said as she got up.

"My knee hurts," Emil added.

Max stood up, ignoring the ache in his shoulder.

"The water's still rising," Lucinda said as he led the way down the bank of pebbles and slate.

"This gorge might run for hundreds of kilometers,"

Emil said.

Max examined the clay walls on either side of them. "We have to climb out."

"It's too steep," Lucinda said. "Maybe it's not as bad farther down."

Max peered ahead through the thinning mists as he went along the bank, but the walls were nearly vertical as far as he could see.

He led the way around two turns, then stopped and went to the wall at his right, determined to climb up.

"Follow me in the steps I make."

"They won't hold your weight," Emil said.

"I'll dig them deep," Max replied.

He scooped out clay with his hands, working at eye level. "Boost me up," he said to Emil when he had made two steps.

Emil sighed, but bent down and put his hands together. Max stepped up, clutched the wet wall, and put his right foot into one of the holes, then hugged the wall and got his other foot in. Blood pounded in his ears as he slipped in the softness.

"Told you," Emil said.

"Quiet!" Lucinda snapped as Max dug with his right hand. When the hole was deep enough, he shoved his hand in and began to dig with his left.

"I can't go up like that," Emil whispered to Lucinda.

"You'll have to," she said.

Max finished the second hole, pushed his hand in, and rested.



Emil asked, "How are you going to move from that position?"

Max breathed deeply, reached down below his waist and dug another foothold, then looked up and saw that it was twenty-five meters or more to the top. Climbing might be possible once the holes were dug—if he could dig them, if they remained firm, if he didn't slip halfway up and break his neck. . . .

He finished the hole below his waist and tried to step into it. He succeeded on the third try, but the clay gave way. He would not be able to lift himself by standing in it.

A roaring sound drowned out the pounding in his ears.

"Max!" Lucinda shouted.

He looked to his right and saw a wall of water rushing down the gorge.

## 8

Max slipped from the wall and landed on the bank just as the flood hit them. He tumbled and twisted, struggling to right himself in the rush, gulping muddy water as his shoes and clothing dragged him under. He surfaced choking and coughing as he gasped for air, treading water with all his strength to stay afloat. He looked around as the current seized him, but couldn't spot Emil and Lucinda. They had struck the wall and drowned, he thought, dazed.

The flow whipped him around. He sank in a panic and struggled to surface, holding his breath until his lungs were about to burst, then pushed up and broke through, sucking air as he twisted in the current.

He cried out with joy when he spotted Emil and Lucinda downstream. They were swimming furiously to escape being dashed against the gorge walls. Wearing shorts had made it easier for them to float. He watched as they bumped and scraped around the turn.

He struck near the same places, protecting himself as much as possible, then swam into center stream and was swept around the bend. Emil and Lucinda cried out to him. He waved back as they vanished into the mist, then was borne into the haze after them.

"Hello!" he cried.

"We're here!" Emil shouted back.

The current quickened. Max shot over a short waterfall and around another turn. He inhaled water through his nose and gagged, wheezing and sputtering as someone grabbed his collar and pulled him up against a rock.

"Stand up," Emil said.

Max found a handhold and touched bottom, breathing more easily. Emil and Lucinda looked frightened but relieved as they clung to the rock.

"We can get ashore," Lucinda said, shivering in the cooling air, and Max knew that they had to get dry before exposure killed them. Lucinda looked half drowned, but seemed determined.

"Link up," he said, taking her hand. She grabbed Emil's hand, and Max led them out from behind the rock. The water pushed at them, but the flood's force was weakening.

They staggered out on the narrow beach, dropped to their knees and stretched out on their stomachs. Max rolled over after a while and looked up at the gorge.

"It's not as steep here," he said, sitting up.

"Not as high," Lucinda said through chattering teeth. "It's so much colder."

Max stood up. "We have to try now. No telling how long the nights are here." He hurried along the bank, picked a spot, dug out two steps in the wall and began to climb. The clay seemed firmer here, and was mixed with stones.

"You can dig with hands *and* feet!" he shouted, climbing by jutting his feet into the clay and scooping with his hands. He glanced up at the mist-shrouded top, then climbed until he could see only the clay wall in front of his face, trapped in an endless rhythm of scooping, kicking, and lifting himself higher. He slipped once and cried out, but dug in fast to stop his slide.

"What?" Emil shouted.

"Nothing," he gasped, resting his face against the cool clay before going on.

Finally, he reached up with his right hand and touched a level area. "I'm on top!" he shouted, and pulled himself over.

He sat there and peered around in the mist. What he could see of the land sloped upstream along the gorge. There seemed to be no obstacles. He sighed with relief and waited.

Lucinda's head popped up through the mist. Max reached down and helped her over. They waited for Emil, then pulled the boy up.

"How do you feel?" Max asked him.

"I'm fine." He was breathing heavily. "Which way?"

"That way," Max said. "Want to rest first?"

"No!" Emil said, staggering to his feet. "Got to go while there's still light."

Max led the way up the slope. The mist thickened, and rain fell gently. Their footing worsened as the slope became steeper. They dug their feet in deeply. Max fell on his face and clawed at the rain-washed clay.

"Sure this is the way?" Emil asked, helping him up.

Max said, "The gorge is at our right, and we're heading upstream." He peered ahead, hoping to see the place where they had come out of the cave.

The sky flashed as he went on, concentrating on placing his feet as firmly as possible in the slippery mud.

"Go slow!" he shouted back.

The slope seemed to rise endlessly into nowhere, and Max felt a sudden hopelessness; nothing at home had ever been this hard and uncertain, or this stupid, not even returning to Earth.

The roar of water in the gorge below grew louder as the rain increased. The sky flashed and thunder rumbled. Max stopped to catch his breath.

"What's wrong?" Lucinda shouted as she crawled up next to him.

He shook his head. "Hard to breathe."

They looked back. Emil was lying face down, but he looked up suddenly and kept climbing. Max crept ahead with Lucinda at his side.

The slope leveled off and the going became easier. They got to their feet as water washed up over the edge from the choked gorge.

Lightning flashed and Max saw the cave. "There it is!" he shouted, and they hurried toward the opening. Max imagined the gorge overflowing into the cave, running into the column and spilling water across countless light-years. "Inside!" he ordered, suddenly afraid that something else would happen to keep them out.

With Emil and Lucinda right behind him, he hurried into the cave, straining to see ahead. Lightning flashed, revealing a square entrance on the column.

"Keep close!" He went in. The curve's strangeness flowed around him, making his skin tingle.

"We made it!" Emil shouted when the bright exit square became visible.

Max stepped out into yellow brightness. Emil and Lucinda came out and stood next to him, disappointment in their eyes as they glanced around the pale yellow expanse.

"Maybe the light changes," Emil said, "and this is our blue-white station after all."

Lucinda sighed. "At least it's warm. We can dry out."

"We'll know that this is where we started from," Max said, "if we find the habitat."

"But which way?" Emil asked.

"If we walk out in ever wider circles from this column, we'll be sure to find it," Lucinda said. "If it's here."

As they stepped away from the column, they heard a high-pitched whine. They looked back and saw the column whirling. The entrances blurred.

"There it goes again," Emil said, sitting down and covering his ears. "That thing just doesn't want to give us a break. We'll never know where we're stepping through to!" He looked up at Max and shook his head in dismay, seemingly on the verge of tears.

Lucinda sat down next to her brother and put her arm around his shoulders. Max looked up at the storm inside the column. The stuff moved like something alive. The column roared for a moment, then shifted down, and the portals became visible again. The sound had not made him dizzy this time.

"We'll keep trying," Max said as he sat down.

Emil looked at him with irritation. "Max, if they keep spinning the column, we'll never find our way back."

"Calm down," Lucinda said, rubbing her brother's shoulders. Emil closed his eyes.

Max stood up. "I'll check for the habitat."

Lucinda gave him a long look of concern, unlike anything he would have expected from the irritating girl he had known. "Go after you've rested," she said gently.

"It won't take long." He smiled, embarrassed by her attention, then marched away into the brightness, feeling for the first time in his life that he liked her, and wondered if he was fooling himself. He peered into the brightness as he walked, then stopped and looked at his timer. He had been walking for nearly twenty minutes, widening his circle while keeping the column at his right. The column was invisible now, and there was still no sign of the habitat.

He wouldn't have to worry about returning to Earth, or anywhere else, because he might never see the habitat and his parents again. He imagined himself, Emil and Lucinda lying against a column somewhere in the vast alien transport system, too weak to move from lack of food and water, with no one to help them.

Panic shook him as he tried to think of what to do. He wanted to run into the brightness and find the habitat, but he pulled himself together, realizing that they would just have to keep trying the portals until they found the right one. He turned and sprinted back toward the column. It loomed out of the brightness. Emil and Lucinda got up as he approached, obviously glad to see him, but their expressions became downcast when he shook his head, telling them he had failed.

## 9

"We'll try the portals in turn," Max said, "clockwise from this one." Emil was about to object. "Well, what's wrong with that?"

"It's systematic, but it doesn't help our odds," Emil said.

Lucinda sighed. "Splitting up might help our odds, Emil, but we might never find each other again. One of us might find the right way immediately, and not be able to tell the other two, ever."

"I know that," Emil replied.

"Then what's your objection?"

Emil was silent.

"There should be a better way than trying one after another," Max said, putting a hand on Emil's shoulder, "but there isn't."

Emil frowned. "It's not fair."

"Why should it be?" Lucinda demanded.

"I think what he means," Max said, "is that if this is something we're *meant* to do, like a game, then it should make sense."

Emil glanced at him. "Right. Whatever's doing this isn't making it easy for us."

Max nodded. "We can't help that, and we're too far in to back out now, so let's go." Lucinda moved toward Emil, then glanced at Max and turned away, as if she didn't want him to see her concern for her brother.

"This one," Max said.

He faced the black opening, glanced back at them and went in, following the right-hand S-curve. Something complex happened in these passages, cutting short the light-years between star systems. It seemed that he should feel more than he did. A quick walk through a tunnel, a tingling of the skin, and a sense of the dark flowing around him just didn't seem to be enough to mark the vast distances that were being bridged. It had taken human beings decades to go from Earth to the nearest star and back, yet he was moving to far more distant points in minutes.

How could any human being ever hope to understand such an advanced technology? Was that why he and his companions had been lured into the system, to get lost and have to find their way back? Was it part of the game to make them wonder if they had been lured

out or had gone out of curiosity? The fact that aliens actually existed startled him. To imagine them was one thing, but to face them was something else. Suddenly he wanted to meet an alien, to confront the beings who had taken him and his companions from their home.

"What's wrong?" Emil asked in a shaking voice. "Why'd you stop?"

"I was thinking," Max moved forward again. The exit appeared as a faint outline up ahead. He came to it and stepped out into what seemed to be another rocky tunnel.

"Well, this isn't it," Lucinda said at his right.

"Let's see what's out here," Max said, moving ahead.

Pale daylight filtered into the tunnel. Max and Lucinda came to the mouth and looked out. At their left, a rising yellow sun burned through mists over a dark blue ocean. The horizon startled Max; he was not used to seeing horizons. The ocean was calm, its gentle waves rolling in lazily.

Lucinda grabbed his arm before he could step out. "We almost got killed last time," she said, holding on, but the wonder of the landscape drew him.

"Seems safe enough. Aren't you curious? Emil?"

"Sure."

"Maybe we should go back and try the next portal," Lucinda said, still holding his arm. "Emil is hurt."

"I'm all right," Emil answered behind them. "Let's take a look."

She was silent, but let go of Max's arm. "You can wait here," he said.

"I'll come," she replied.

Max stepped out on the rock-strewn ground and led the way to the gray sands of the beach, under an open sky again far away from the habitat's protected space. Here, as in the flooding gorge, the sky went up forever, and could contain anything. The thin cover of atmosphere was not made to protect him. Planetary atmospheres shielded living things that had adapted to their conditions. Max wondered what levels of solar radiation were getting through and if the air was really fit to breathe.

"It's like some of the images of Earth," he said, finding it hard to believe that there could be any danger here.

"Even Earth would be better than being lost," Lucinda muttered. "I know we were supposed to be looking forward to going back, but I wasn't."

Surprised, Max stopped and looked at her. "But you seemed so sure of yourself," he said. "About everything," he added.

She stared down at her feet. "I have to be that way. My mother—well, everyone knows how competent our Navigator is. No child of Linda ten Eyck could ever be less. It helped me to act the way people expected me to. I didn't really have to compete. But what'll I be on Earth? There are millions of kids there—we'll just get lost in the crowd."

He had not expected this from her. He wanted to say something that would reassure her, then wondered what it would take to reassure him. At last he said, "We'll be the ones who found this alien transport system. That ought to count for something."

She smiled, then looked anxiously at Emil, who had

wandered down to the water. "If we get home," she said, taking Max's hand. As they walked toward Emil, the younger boy turned around and frowned, looking puzzled by their handholding.

The waves seemed to whisper more loudly as the yellow sun rose higher, warming their faces, and Max wondered again if they were getting too much radiation. The damp, salty air smelled of vegetation and rotting fish.

"Look!" Lucinda shouted.

To the left of the yellow sun, a bright point was rising. Max realized that it was a second sun, a blue dwarf climbing the sky after its companion. "Another double star!" he said in wonder.

"Double stars are common," Emil said. "There may even be a third star here."

"I'd like to see that," Max said excitedly.

Emil was watching his sister carefully, as if expecting an explanation for her friendlier treatment of Max.

"I wonder what life there is in this ocean," she said.

Max sat down on the sand and hugged his knees. Emil and Lucinda sat down next to him.

The ocean made him feel peaceful, and he imagined schools of exotic fish rushing through the deeps, whales navigating like great ships through vast underwater canyons, giant crabs walking across submerged plains. He glanced at Lucinda questioningly.

"Did you really think," she said, "that you were the only one who was worried about returning to Earth?"

"I guess I did." He felt embarrassed.

"Maybe if you'd talked to more of the others, you'd have known you weren't alone."

"Emil, do you feel the same?" Max asked.

The boy shrugged and looked away. "I guess it'll be interesting." He raised a bushy eyebrow. "If we get back."

Lucinda said, "You told me you were afraid."

Emil glared at her. "You don't have to say it in front of him."

"I was afraid, too," Max said. "Maybe I still am."

Emil looked at him dubiously. "You're just trying to make me feel better. You're friends with her now, so you have to be nice to me. If we weren't in this mess together, you wouldn't think you had to get along."

"But I want to be your friend anyway, if you'll let me."

"I don't get it. You never really liked either of us."

Max took a deep breath. "So I was wrong about you both," he said, surprised at how easy it was to say that now.

"Look at that!" Lucinda shouted.

Something long slid out of the waves onto the beach, moving like a giant black snake, except that it was segmented into joints. It stood up for half its length and swayed back and forth as if searching for something.

Emil stood up, trembling.

"It's seen us," Lucinda said.

"Come on!" Max cried, pulling Lucinda to her feet.

The snake lowered itself and slithered across the sand as they backed away toward the rocky area above the beach, then rose up again and examined them with eyes that were clusters of lenses on each side of its head.

"Why should it want us?" Lucinda asked, gasping for

breath as they turned and scrambled across sharp rocks and slippery seaweed.

"Food!" Emil blurted. "Maybe we're the same size as things it lives on."

Max glanced back. The snake threw up sand and weeds as it slid between the rocks. They reached the outcropping and Max saw for the first time that there were two openings.

"Which one?" Emil cried, tripped, and hit his head on a rock.

"Left, the larger one!" Max shouted. Lucinda helped him with Emil. "Inside!" They dragged him between them.

"I'm okay," Emil said, pulling free.

They ran through the cave tunnel. Max imagined being swallowed by the long black body and digested for weeks; he had once read that snakes did it that way. He was sweating as they sprinted the last few meters and rushed through the black passage. It seemed to take forever to come out. Max felt that he was swimming in a black, oily substance. It slowed him down, but finally he burst out into the yellow station.

"It'll come after us," Emil said, squinting in the bright light. Max noticed the bruise on his forehead. Lucinda took a closer look.

"Does it hurt?" she asked, panting.

"Not much," Emil winced, gulping air.

"Doesn't look bad."

"Leave me alone!" he cried.

She turned to Max. "Maybe it went into the other cave, and wasn't after us at all."

Max shook his head. "It was after us," he said as his breath came easier. "Let's go. If it comes out here, it won't know which one we took."

He faced the next square and went in, with Emil and Lucinda right behind him.

## 10

Max came to the exit, peered out into a blue-white station, then stepped out on the hard floor. Emil and Lucinda came out and stood at his right.

"The color's right," Emil said.

They stood to one side of the dark exit, ready to flee, but there was no sign that anything was coming through after them.

"Maybe this is our station," Emil said hopefully. "Unless they're using the same color twice."

Lucinda laughed. "No reason why they shouldn't."

"Okay," Max said impatiently. "I'll go out in a widening circle. If I don't spot the habitat in ten minutes, I'll come right back. It can't be far if this is our station."

"You're assuming," Emil said, "that there's only one column in the station from which we started. There may be others, far away from our habitat, even if this is the right station. And wouldn't it be better for all of us to go out?"

"I won't be gone long," Max answered. "The habitat is too big to miss."

"Don't be so bossy," Lucinda said.

Max flushed, stung. "I wasn't trying to be," he replied.

As he marched away through the blue-white glare, he thought about how Lucinda used words to mangle people, and how much Emil enjoyed watching her do it. He looked back and saw her waving at him. The glare distorted her figure, making her look taller, exaggerating her shorts and dark hiking shoes. He waved back, then noticed that the column behind her and Emil was nearly invisible now, just about the way it would look if he were near the habitat.

He turned around and searched for it, then went on to his left, still hoping, but saw only bare floor. Disappointed, he started back.

Emil looked downcast.

"It could be over to the right," Lucinda said.

"I'll go again," Max said.

They sat down against the column as he hurried away, resenting the forces, blind or deliberate, that had put them in this situation. They might have died in the flooding gorge, or been eaten by the alien snake. What was the point? He was beginning to suspect that they had been lured out at random into an automatic trap of some kind, one with a purpose set so long ago that it wasn't working right any more.

He stopped, peered ahead, saw only the endless floor, turned and went back.

Lucinda was alone at the column. "Where's Emil?" he asked.

"Searching, because he wasn't sure you'd made a wide enough circle. Tell me, doesn't the color of this station seem just a bit lighter?"

Max sat down next to her. "You're right. It's the wrong station." He closed his eyes, feeling tired.

"Max . . ." she started to say.

He opened his eyes. She was gazing at him as if he had become someone else.

"How long have we been gone?" he asked. "I don't remember when we started."

"Nearly fifteen hours by my timer."

"They'll be looking for us by now."

"They'll find the column and go through," she said anxiously.

"Maybe not. They'll search the habitat first, then go outside. That may take a day."

"But if other people have been lured out, they'll go looking immediately. It would be terrible if people got hurt trying to find us. We've got to get back as soon as possible!" She fell silent. Max closed his eyes and drifted.

"Max?"

"What?" he mumbled.

"Do you like me?"

He opened his eyes. "Sure," he heard himself say as he noticed a bruise just below her right knee.

"There's no reason you should," she continued. "I mean, the way I've acted toward you. Sometimes I can't stop myself even when I know I'm being a real bitch. But I was always a little afraid of you."

"Of me?" he asked in surprise.

She nodded. "You're Max Sorby, too high and mighty to have anything to do with the rest of us. You always seemed so happy off by yourself, as if we couldn't pos-

sibly be of any interest to you. You acted as if we were all silly. I guess I liked chipping away at you sometimes."

Max shook his head in disbelief. "I don't mind being by myself, and maybe . . . well, I talked to my parents a lot, and the rest of the time I didn't really feel I needed anyone. It never occurred to me that anyone would resent me for that." He looked directly at her. "There's got to be more than that."

She looked away as if he'd uncovered her deepest secret. "I always thought you were very smart, but you didn't seem to want to do much with it. It made me mad. You wouldn't get very far being by yourself all the time. Maybe if you'd had a brother or sister, you'd have had to get along with them, and that would have made you friendlier." She paused. "Not that it exactly worked that way for me, having a brother."

"I really *like* being by myself."

She sighed. "You're a little shy, Max."

"No, I'm not."

She leaned over and kissed him on the cheek. He stared at her, then turned away.

"See? But it doesn't matter here," she whispered, slipping her hand into his.

"You worry about Emil a lot, don't you?" he asked.

"I do," she said, looking at him grimly. "My mother lost her brother when she wasn't much older than I am, so she makes me look out for Emil. I think she'd go crazy if anything ever happened to him."

"I know," Max replied. "My father told me about the quakes on Mercury. My mother told me he tried to save your uncle. Dad doesn't talk about his bad times much."

"My mother's never forgotten. She's made me feel that if I don't look after Emil, the same thing might happen to him."

"What does your father think?"

"I overheard them arguing once. He told her to go easy on me, to let the dead rest. He was very angry." Lucinda's eyes glistened. "Oh, Max, she must be worried sick about us by now!" Her hand tightened in his.

Feeling a wave of concern and tenderness for her, he leaned over and kissed her cheek. A rush of warmth went through him as her green eyes looked at him. Her face, soft and flushed suddenly, did not belong to the Lucinda he had known or imagined. She leaned closer to him.

"I see you!" Emil called out as he approached. He came to the column and stood over her, grinning.

"There's steam coming from your ears, Max."

"Oh, shut up," Lucinda said, glaring at him.

"You found it!" Max shouted, getting to his feet.

Emil's smile faded. He grimaced and gave Max a sad look. "Nah, we're in the wrong place again."

"We have to keep going," Max said as he and Lucinda got up.

"What if that snake is waiting for us somewhere?"

Emil asked with a laugh. Max saw that the younger boy was trying hard not to sound afraid.

Lucinda gave him a stern look. "We have no choice. Odds are it didn't follow the way we came. Maybe it never entered the column at all."

"You hope," Emil replied. "It may be waiting for us anywhere. Maybe it's even gone home ahead of us."

"Don't be silly," Lucinda said, looking to Max for help.

Max tried to sound cheerful. "He's only joking."

Emil looked at him warily. "But we can't be sure!"

Max laughed. "That snake wasn't too bright. Probably went back into the ocean."

Emil nodded hopefully, and took a deep breath. "I'm getting hungry."

"We'll only get hungrier," Max said. "Let's go."

"Max," Lucinda said, "do you think we'll have to retrace our steps exactly to get back?"

"What do you mean?"

"Do we have to go back to the ocean world, to the gorge world, then back to that big dome, and then pass through back to where the habitat is trapped?"

Max frowned. "Maybe there's a direct portal back. We can't tell. All we can do is to keep trying them one by one."

Emil looked unhappy. "Which one now?"

"Over here, to the right of the one we were sitting by."

"Don't worry," Lucinda added, "we'll get back."

Emil stepped aside. Max went into the blackness and followed the S-curve to his right. Suddenly he imagined that he had entered the snake's mouth and was marching into the creature's stomach.

"There's the exit!" Lucinda shouted.

Max came to it and peered out. "I think we're back in the yellow station."

He stepped out. Emil and Lucinda came and stood on either side of him. "No snake," he said, pointing to the next portal. "Let's keep going."

He went in. Lucinda came up beside him in the alien darkness and took his hand. They moved forward together.

"I don't see the exit," she said. "This passage seems longer than the others."

"Let's go back!" Emil shouted.

"We've got to be sure," Max insisted. Lucinda's hand tightened in his. His throat felt dry. Finally, he began to see light. The square exit became visible. They came to it and peered out.

The sky was full of stars. A warm breeze blew across the cave exit, creating a low howl. Max saw a forest of bulbous trunks and giant leaves. Two moons seemed to be floating through the twisting branches. One orb was bright yellow, the other bronze.

"This isn't it," Emil said. "Let's go back."

"We need water," Max replied. "Maybe there's some around, and there's no telling when we'll have another chance."

"I am thirsty," Emil said.

"It may be nearby," Max said, stepping cautiously out on the moss-covered ground. The air was warm on his face. He looked up at the starry sky and wondered how far from home they had come this time. How were distances measured through the curving passages? Once again he was awed by the power of the civilization that had made these star-spanning stations.

As his eyes adjusted to the night, he saw a way through

the forest. "That way. Maybe there's a lake or a stream." He looked back at the outcropping of rocks from which they had emerged. The cave entrance was partly hidden behind bushes.

Lucinda touched his arm. "Listen!"

Max heard something like a cricket chirping, then a low humming. He took her hand and led the way through the trees. Glancing back, he saw that she was holding onto Emil.

"I heard water running," she said suddenly.

They hurried ahead. A stream cut across their path.

"It may not be safe," Lucinda said.

Max got down on his hands and knees, stuck one finger in the water and sniffed the drop. "It smells strange," he said, getting up. "Better not risk it. We have to get back before we get really hungry and thirsty." The flowing water tempted him. He saw the look of disappointment on the pale, moonlit faces of Emil and Lucinda.

Something grunted far behind them.

Emil looked around. "What was that?"

"It's coming closer," Lucinda whispered.

They hid behind one of the bulbous trunks and waited. Max heard another grunt, louder this time. He watched the trail.

A dark shape appeared, at least two meters tall at the shoulder, moving on what seemed to be four legs. Max watched, fascinated. Emil gasped behind him.

The beardlike shape stopped and snorted, as if suddenly aware of them, then reared up on its hind legs, three members into the tree, and began to munch on the big leaves. Max stood perfectly still and stared at the creature's belly.

Finally, the giant burped, dropped down on all fours again, and ambled into the stream to drink. After a few moments the slurping sounds stopped. The creature wandered up the far bank and disappeared into the shadows.

"Now!" Max said, leading the way back to the trail.

As they approached the outcropping, Max saw dark figures sitting on the rocks around the tunnel entrance. One of the shapes launched itself into the air and landed in front of him.

Emil cried out. "Stand still!" Max whispered loudly.

This creature was something like an ape, but very stocky. It moved toward him, and Max froze as it looked into his eyes. Two other shapes dropped down in front of Emil and Lucinda.

"Don't move," Max said.

Emil stifled a cry.

The creature's face was now close enough for Max to touch. The large eyes seemed puzzled as they examined him. Max's knees shook. The creature turned its head sideways, as if that might help it to understand the intruders, then grunted and touched Max's nose.

He jumped back and waved his arms. "Run! Inside—quick!"

Emil and Lucinda rushed past their creatures. Distracted, Max's biped turned and looked after them. Seeing his chance, Max dashed for the tunnel, and made it inside just behind Emil and Lucinda.

They ran for the portal, not daring to look back. Max

plunged in, with Emil and Lucinda behind him, and the strangeness of the S-curve seemed almost comforting.

"Will they follow?" Emil asked, gasping for breath as they reached the exit.

Max stepped out into a blue station. Emil and Lucinda almost knocked him over as they came out. After a few moments, he realized there was no one behind them.

"I think," Max said as he took a deep breath, "that they must have learned a long time ago to stay away, after a few of them probably disappeared."

"What were they?" Emil asked. "Animals or intelligent beings?"

"Maybe something in between," Max said, still seeing the strange eyes peering at him in the starry night.

"This might be our blue station," Emil said.

"Or the other one we visited," Lucinda added.

"Or a third one," Max said, realizing that the column might have whirled while they were outside.

## 11

"It's not here," Max said as he sat down between Emil and Lucinda. Again they had explored in widening circles. "I went twice as far." He leaned back against the column and closed his eyes. The way to the habitat's blue station was through one of the twelve portals, he told himself again; but how long would it take to hit on the right one if the columns continued to make their random spins? His answer was always the same: keep trying one portal after another. Spin or no spin, there wasn't much else they could do. Maybe the spins had nothing to do with fixing destinations, and the portals always stopped where they started, as part of a recharging process of some kind. But if destinations were being set, then maybe someone or something wanted them to follow a certain path.

"Let's get going," Lucinda said.

He opened his eyes and saw her standing over him. She helped him up, then looked at her brother. "Come on, we'll only get more tired and hungry."

Emil struggled to his feet.

Max hurried into the next portal. The blackness closed in around him. His neck tingled, as if he could feel the vastness of the space he was traversing, even though he knew that the passage could not be covering distance in the usual way. It was a shortcut, a way of collapsing the distance between two distant points, as one might bring together the ends of a piece of string. To make space plastic in this way required vast amounts of energy, he supposed as he peered ahead, looking for the exit.

"What's wrong?" Lucinda asked as he stopped.

"This one seems longer than the others," he replied.

He went ahead slowly, and finally saw the exit. It glowed pale green. He approached warily.

"This doesn't look right either," Emil said as they peered out into another cave exit. "Better go back."

Max looked at Lucinda. Her eyes were darker in the green light. She touched his hand. "Maybe we should go back."

Max nodded and turned around. They followed him in silence.

Halfway through the curve, he bumped his nose against a barrier.

"What is it?" Lucinda asked.

"Hit something," he said. "One side of the passage, I think."

"But we're in the middle," Lucinda objected.

Emil said, "Can't walk straight?"

"I was walking straight," Max replied as he reached out and touched the obstruction. He ran his hands across a smooth surface, following it down to his feet, and explored to his left and right, but found no seams. The barrier curved back, becoming the sides of the passage itself.

"I don't know what it is," he said, "but we can't go this way."

"What?" Emil shouted.

"Touch it yourself," Max said. He heard Lucinda tap the surface with her fingers. Emil gave it a few impatient slaps.

"There's no way through," Lucinda said at last.

"But there was," Emil added. "What is this? Why is it here?"

"Maybe we triggered something that closed it," Max said. "Or something decided to close it on us." His throat felt very dry.

"But why?" Emil asked.

"They don't want us to go back this way," Lucinda said.

Max said, "Maybe this passage closes when the column is spinning, and opens when it stops."

"I'm very thirsty, Lucinda," Emil complained.

Max sat down against the barrier. "We'll be right here when it opens," Lucinda slid down next to him.

"I'm going to look out the exit," Emil said impatiently.

"Stay inside!" Lucinda called after him.

Max leaned back and closed his eyes, feeling lost and useless.

Lucinda leaned against him. "Max, what are we going to do?"

He took a deep breath. "I don't know. This is getting complicated. Each portal may have an exit in another column somewhere. That would make twelve columns with twelve portals each. Every one of those one hundred forty-four portals might then lead to a column with twelve more portals, and so on. The system might branch like a tree. It's possible that only one portal leads back to the column where we started, in the first blue-white station, where the habitat is trapped. The passages work in two directions, but they can close, like this one."

"We may never get back."

"We don't know that. If we have to depend on chance alone, it'll take a long time. If we're meant to get back, then maybe we're being guided toward the right choices. We just don't know. . . ."

Emil's shape was outlined against the square exit.

"Maybe we should go out," Lucinda said, "and risk drinking what water we can find."

"The passage may open while we're gone."

They watched Emil's silhouette in the opening. "We may have to go out and live on that world out there," Lucinda said.

"The passage will open, and we'll get home," Max replied uneasily.

"What if it opens once in a hundred years, or twenty, or five? Even one week would be bad enough."

He put his arm around her. "Don't sound like Emil. It can't be that long."

"Are you getting cold?" she asked suddenly. He felt her shiver against him.

"A little," he said.

"We haven't eaten for a while. That makes you feel colder."

"No kidding. You sound so official."

"Like my mother, you mean."

"A little." He held her closer. "Warmer?"

"Yes," she whispered.

Emil's shape sat down in the exit.

"Lucinda," Max began, feeling awkward.

"What?"

"Let's—let's not ever be the way we've been before, toward each other, I mean."

She touched his face gently. "I promise, Max."

Emil came back and sat down next to them. "Getting dark out there. I saw a few trees beyond the cave." He seemed in a better mood. "Well, what do we do?"

"Get some rest until the passage opens," Max closed his eyes.

"Fine with me," Emil said tiredly.

Max opened his eyes in near darkness. The barrier still pressed against his back. His throat was very dry now. Lucinda's head lay in his lap.

He touched her gently. She stirred and sat up.

"The barrier's still up," he said. "We'll have to go out and try to find some water."

He heard her stand up and stretch.

"What is it?" Emil asked sleepily.

"We're going outside." He led the way toward the faint exit. The light became brighter when he stepped through the exit into the cave tunnel. He came to the mouth and looked out.

"It seems to be morning," Lucinda said as she came up next to him.

Max stepped out on the rocky ground and breathed warm, humid air. He looked up through the trees and saw a patch of blue sky. It was getting lighter, but he couldn't see the sun.

The exit here was also in an outcropping of rock, set high above the forest floor. The tree trunks were straight and tall. Yellow-green leaves shook on the complex branchings. The forest was strangely quiet.

Emil and Lucinda came out and stood next to him. He smiled at her; she smiled back uneasily. Max took her hand and they started down to the forest floor, with Emil following.

They reached bottom. Here the forest aisles were carpeted with oddly shaped leaves. A rough red moss crept up along the massive tree trunks. Close up, many of the trees seemed deformed, as if someone had tried to make shoulders, arms, legs, and giant heads, but had failed.

"Which way?" Emil asked meekly.

"I hear something," Lucinda said.

"Running water!" Emil shouted.

Max listened. "I hear it, too."

"That way," Lucinda said, pointing straight ahead, and led the way across the carpet of alien leaves. Emil followed her, and Max brought up the rear, stepping carefully on the soft ground as he scanned left and right, trying to be ready for the unexpected. This was a very different forest from the other one they had visited.

Sunlight cast yellow-white spears on the leaves ahead of them. "Sun's higher," Emil said, staring in wonder at the variety of colors brought out by the light.

"Don't touch anything," Max replied. "Alien vegetation might be poisonous."

Emil looked left and right with suspicion.

"Don't get too spooked," Max added. "Just be careful."

"The water's louder," Lucinda said.

They marched across the dewy leaves, drawn by the murmur of the flow, and came out into a clearing of tall yellow grass. High over the trees on the other side, a white sun burned through the morning mists. A warm breeze stirred against Max's face. He heard the stream clearly now.

Lucinda pointed. "It must be on the far side."

"I'm dying for a drink," Emil said. He pushed into the grass, then cried out as it caught on his legs and shorts.

"Help me!" he called out, twisting his body to get free.

Lucinda started after him.

"Wait!" Max shouted, grabbing her arm.

"Get me out!" Emil yelled.

"Don't move!" Max shouted to him.

Lucinda tried to twist free.

"Stay here," Max said as he let her go and slowly approached Emil. Gentle motion, he noticed, prevented the briarlike hooks on the grass stalks from catching on his coveralls. He grasped one stalk between the briars and pulled carefully.

"It hurts!" Emil cried.

Max glanced back at Lucinda. "Stay there. I'm better protected than you are." He was grateful that he had put on his long coveralls over his shirt and shorts. She nodded, her eyes wide with fright, and wrapped her arms around herself as if she were cold.

Emil closed his eyes as Max worked. The hooks came out only with great difficulty. Most were caught on Emil's shorts and were easily removed, but a few had cut deeply into his legs. Max loosened these briars as carefully as he could, but there was no way to avoid pulling out pieces of flesh and skin. Emil gritted his teeth, then cried out. Max freed the last hook and led Emil out of the grass.

"How do you feel?" he asked, examining the boy's bloodied legs. Fortunately, the briars had missed major blood vessels.

"Funny. A little dizzy."

Lucinda helped Max walk him back into the forest, where they sat him down against a tree. Emil leaned back and closed his eyes. "I'm very thirsty."

"I'll go around the clearing and find the stream," Max said, hurrying away.

Slowly, with great care, he circled the clearing, moving toward the sound of the stream. The sun broke through the trees and was hot on his face. He shielded his eyes with his hands and tried to stay in shade. Unlike the countryside in the habitat, the humidity was set too high, and the alien plant life was varied and dangerous. The forest was alive with unknown things, all belonging to an ancient natural history that he couldn't even imagine. The habitat was less than fifty years old, and had been made for human life. No enemies roamed the inner surface of the asteroid core.

He saw the stream running out of the forest and crossed the far side of the clearing. He came to the water and saw that it ran clear, with multicolored stones on the shallow bottom, catching the sunlight. He knelt down and peered at the liquid. With the passageway closed, they were trapped on this world, and would have to risk the water. Later, hunger would force them to chance eating something. He leaned down and sniffed the water. There were no odors. He touched the flow with his tongue, then drank greedily. The liquid rushed down his throat and filled his belly.

He looked around for a way to bring some back, spotted what seemed to be a broken husk lying near a tree, and went over to examine it.

The husk was made of a fibrous material, and would hold at least three cups of water. He filled it and started back, moving quickly along the way he had come. Lucinda was kneeling over Emil, stroking his forehead, as Max approached.

She stood up when she saw Max. He gave her the husk, and she knelt down again. Emil opened his eyes, smiled weakly, then closed them again.

"Drink," she pleaded. Max raised Emil's head, and the boy took a couple of swallows.

"Now you," Max said.

She looked at him with concern.

"I drank at the stream," he said.

She sipped, then set the husk down. "I think he's poisoned from the briars." Tears ran down her face. "Max, we've got to do something!" What she feared most had happened, he realized; Emil was hurt and getting worse. "What should we do?" she cried, looking at him as if it was his fault, but he knew that she was blaming herself.

Max stood up. "I'll get some more water." He hurried away, feeling helpless.

*To be concluded*



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# AMAZING<sup>®</sup> STORIES

## Back Issues and Anthologies

If you like what you've seen in this issue of AMAZING<sup>®</sup> Stories, there's more where it came from. We have a small selection of back issues dating from the 1970s, plus almost every magazine from May 1990 through May 1993, available for purchase by mail order. The list on this page and the facing page mentions every magazine that's for sale, and gives a few of the stories you'll find in each one.

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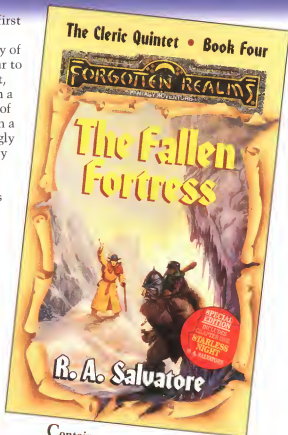
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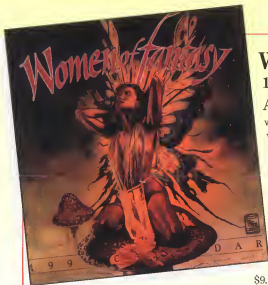


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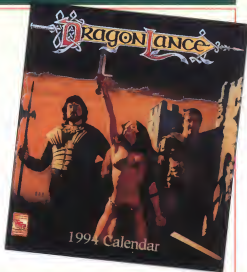
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